ORDER NO. VSD9406M252B
D4

Service Manual

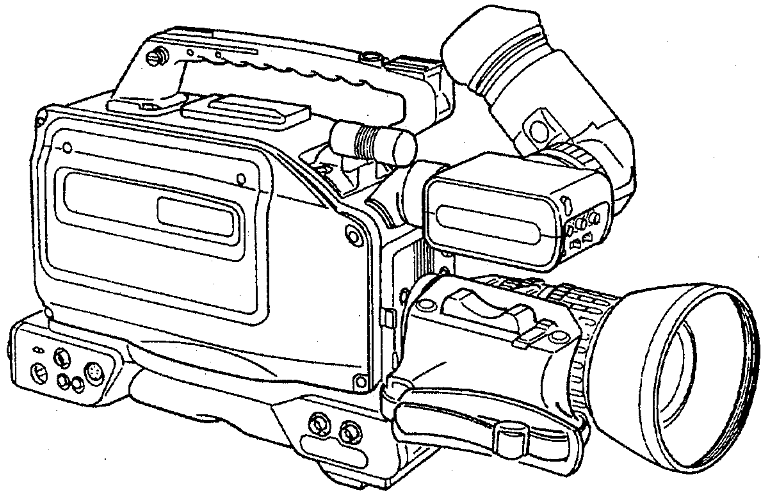
Volume 2

Panasonic S-VHS Hi-Fi

S-VHS CAMERA/VTR

AG-DP800P

- Sec. 6 *Mechanism*
- Sec. 7 *Electrical Adjustment*
- Sec. 8 *Block Diagrams*
- Sec. 9 *Supplement*



The Operating Instructions (Sec. 1), Disassembly Procedures (Sec. 2), Schematic Diagrams (Sec. 3), Circuit Board Diagrams (Sec. 4), and Exploded Viws & Replacement Parts Lists (Sec. 5), please refer to the Service Manual Volume 1 (Order No. VSD9406M252A).

The detail circuit description for this model, please refer to the Supplement Service Manual (Order No. VSD9406D210).

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advice non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service manual by anyone else could result in serious injury or

SPECIFICATION

Power Supply	DC12V(10.5～17V)
Consumption	23W(Recording mode:20W)
Operating Temperature	32°F～104°F (0℃～40℃)
Humidity	35%～80%
Dimensions (W×H×D)	4-7／8×11-11／16×14-1／8(inch) 123×296×357(mm)
Weight	9.9lbs(4.5kg)(incl.EVF) 14.74lbs(6.7kg)(incl.EVF,Lens,Tape)

【CAMERA】

Image Sensor	1／2inch Frame Interline Transfer (FIT) CCD×3
Pixel:	380,000 pixel
H. Drive Frequency	13.5MHZ
Sesitivity	3200K 2000lux,F8.0
Minimum Illumination	Approx.2lux(F1.4／+30dB)
S／N Ratio	More than 56dB
Horixontal Resolution	More than 650 lines (center)
Sampling Frequency	13.5MHz／27MHZ
Shutter Speed	1／100, 1／125, 1／500, 1／1000 1／2000, 1／4000, 1／8000
Synchro Scan Shutter	1／61.95～1／253.78
Gain Selection	0／+9／+18／+24／ Super High Gain+30dB
CC／ND Filter	3200K, 5600K, 5600K+1／8ND
Pickup System	Prism sysem (F1.4)
Lens Mount	Bayonet mount for 1／2" lens
Registration Error	Less than 0.03%(over entire range, excluding lens distortion)
Scene Files	Normal, A／B, Sparkling Fluorescent light, Special

【EVF】

Display Tube	1.5" high-resolution monochrome tube
Horizontal Resolution	More than 550 lines (center)
External Control	BRIGHT, CONTRAST, PEAKING, TALLY, ZEBRA, CHARACTER

【VTR】

Recording System	4 rotary heads, helical scanning system, (S-VHS format)
Tape Speed	33.35mm／sec
Tape Used	S-VHS, VHS tapes
Recording Time	120 minutes(with NV-T120)
FF／REW Time	Less than 9 minutes(with NV-T120)

【Video】

Television Standard	EIA standard(525 lines, 60 fields) NTSC color signal
Head Modulation System	Luminance: FM azimuth recording Color: converted subcarrier phase shift recording
Outputs LINE(BNC)	1.0Vp-p 75Ω
S-VHS(4P)	Y: 1.0Vp-p Ω C: 0.286Vp-p 75Ω
Horizontal Resolution	S-VHS: more than 400 lines VHS: more than 240 lines
S／N Ratio	S-VHS: more than 47 dB VHS: more than 45 dB

【Audio】

Head	Normal A／C: 1 stationary head Hi-Fi audio: 2 rotary heads Erase: 1 full track erase
Track	Normal audio 2 tracks Hi-Fi audio 2 channels
Inputs MIC／LINE (XLR)	−60／−50／−40／−6／0／+4dBs 3 kΩ balance
Outputs LINE (PHONO)	−8 dBv low −8 dBv low-imp. unbalance
EARPHONE	−60～−20 dBv, 8Ω
S／N Ratio	Better than 48 dB (Dolby ON, A curve, S-VHS tape)
Dynamic Range	More than 80 dB
Frequency Respose	Normal: 100Hz～10KHz Hi-FI: 20Hz～20KHz
Crosstalk	Normal: More than 40 dB Hi-Fi: More than 55 dB

【I／O Connector】

CAMERA OUT(BNC)	Composite signal 1.0Vp-p 75Ω
GENLOCK IN(BNC)	Black Burst signal 1.0Vp-p 75Ω
VTR Video out	Composite 1.0Vp-p 75Ω
Audio out	−20 dBv low-impedance unbalance
Start／Stop	Start: 5V, Stop: 0V impedance 1kΩ
Tally	REC: 5V,Pause: 2.5V hi-impedance out
LENS	12 pins
EXT DC	XLR 4P

【ACCESSORIES】

1.5" Viewfinder	Battery mounting terminal
Sholder strap	Anton Battery Adaptor
Lithium Battery	

INTRODUCTION

This Service Manual contains the technical information (Mechanism, Electrical Adjustment and Block Diagrams) which will allow service personnel to understand and service the Panasonic S-VHS Camera/ Recorder model AG-DP800.
This model has many special features as discribed in the Service Manual Volume 1. These features make the AG-DP800 an ideal unit for production, business, education and entertainment.

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X-RADIATION

WARNING

1. The potential source of X-Radiation in EVF sets is the High Voltage section and the picture tube.
2. When using a picture tube test jig for service, ensure that jig is capable of handling 10kV without causing X-Radiation.
   NOTE; It is important to use an accurate periodically calibrated high voltage meter.
3. Measure the High Voltage. The meter (electric type) reading should indicate 2.5kV, ± 0.15kV. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure. To prevent an X-Radiation possibility, it is essential to use the specified picture tube.

"THE LITHIUM BATTERY IS A CRITICAL COMPONENT (TYPE NUMBER CR2032 MANUFACTURED BY PANASONIC).

IT MUST NEVER BE SUBJECTED TO EXCESSIVE HEAT OR DISCHARGE. IT MUST THEREFORE ONLY BE FITTED IN EQUIPMENT DESIGNED SPECIFICALLY FOR ITS USE.

REPLACEMENT BATTERIES MUST BE OF THE SAME TYPE AND MANUFACTURER. THEY MUST BE FITTED IN THE SAME MANNER AND LOCATION AS THE ORIGINAL BATTERY. WITH THE CORRECT POLARITY CONNECTIONS OBSERVED.

DO NOT ATTEMPTTO RE-CHARGE THE OLD BATTERY OR RE-USE IT FOR ANY OTHER PURPOSE. IT SHOULD BE DISPOSED OF IN WASTE PRODUCTS DESTINED FOR BURIAL RATHER THAN INCINERATION."

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.

VARNING

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

ADVARSEL !

Eksplosionsfare ved fejlagtig håndtering.
Udskiftning ma kun ske med batteri af samme fabrikat og type. Lever det brugte batteri tilbage til leverandøren.

VAROITUS

Paristo voi räjähtaa, jos se on virheellisesti asennettu. Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Havita kaytetty paristo valmistajan ohjeiden mukaisesti.

SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. When servicing observe the original lead dress. If a short circuit is found, replac all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protectiv devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs onthe plug.
2. Measur the resistance value, with an ohm meter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwhead connectors, contrl shafts, etc. When the exposed metallic part has a return path to the chassis, the reading shoulb be between 1MΩ and 5.2MΩ.
   When the exposed metal dose not have a return path to the chassis, the reading must be ∞.

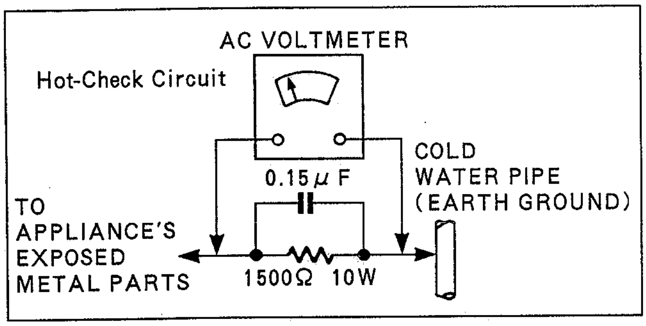

Figure 1

LEAKAGE CURRENT HOT CHECK (See Figure 1)

1. Plug the AC cord directly into the AC outlet.
   Do not use an isolation transformer for this check.
2. Connect a 1.5KΩ, 10W resistor, inparallel with 0.15μF capacitor, between each exposed metallic part on the set an a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measur the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possiblity of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

ELECTROSTATICALLY SENSITIVE(ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground.
   Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package untilimmediately before you are ready to install it. (most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION: Be sure no power is applied to the chassis or circuit, and observe all otner asfety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devoces. (Otherwise harmless mother such as the brushing together of your clothes fabric or the lifting of your foor from a carpeted floor can generate static electricity sufficient to damage an ES device).

SECTION 6

MECHANISM

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6-1. GENERAL INFORMATION

If the electrical circuit is defective and movement of unloading or cassette eject does not work properly, it is possible to remove the cassette manually.

6-1-1. EMERGENCY CASSETTE EJECT

A : Condition of Stop position (tape unloading in the cassette)

1. Remove the left side panel.
2. Insert screw driverinto left upper corner of mechanical chassis as shown in FigureG1 and push down the eject lever in the direction of the arrow.

Note: Attempting this procedure when the tape is in the loaded position, may cause tape damage.

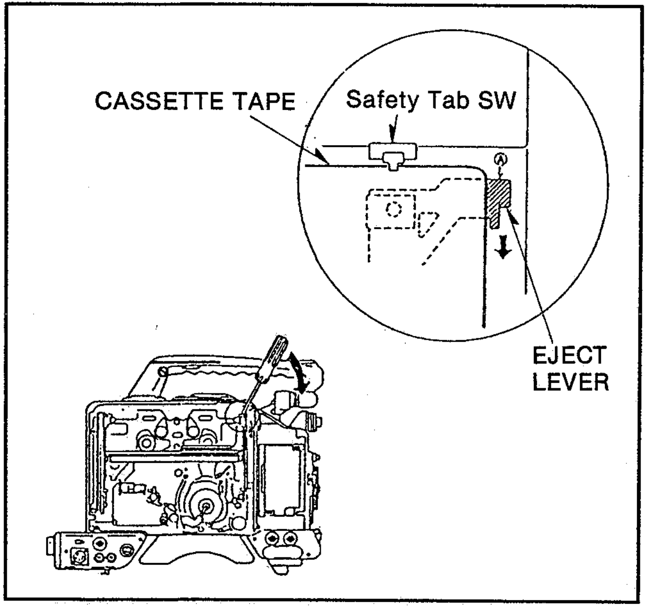


Figure G1

B : Condition of Play postion (tape loading)

1. Remove the right side panel.
2. Open the Process C.B.A. with Video and System Control C.B.A.
3. Remove the Mechanical Connection C.B.A.
4. Turn the drive gear (A) to counter-clockwise until the pressure roller postion is at the stop point.
5. Turn the main pulley counter-clockwise until the tape is in the cassette.
6. Turn the drive gear (A) again to up the cassette carriage.

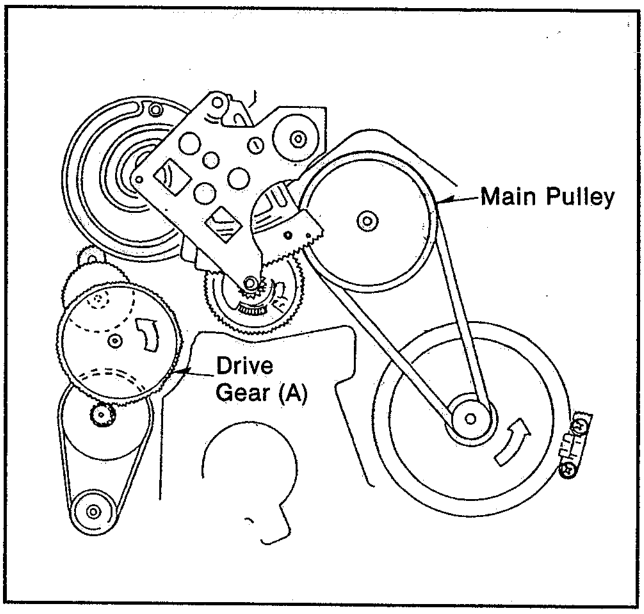


Figure G2

6-2. MAINTENANCE PROCEDURES

6-2-1. MAINTENANCE CHART

REGULAR MAINTENANCE

The purpose of periodic maintenance is to preserve the functioning of this machine throughout its useful life. The user or service dealer should perform these maintenance regularly to ensure that maximum utility is obtained from the machine.

The VCR is a complicated place of equipment. It contains many belts, rollers, heads etc., which become worn, and deterlorate as time goes by, causing trouble. Dust and dirt will also impede the proper functioning of the machine. In light of this, it is very important that overall maintenance be done according to the maintenance chart to maintain the functions of the VCR, and to avoid accidental problems. This maintenance should also be performed after any repairs are done on the equipment.

The VCR used for business applications requires particular attention for several reasons. The installation conditions and applications are not always the best. Long use times, or poor environmental conditions may adversely affect the lifespan and performance of the machine. Regular maintenance assures that the purchaser obtains the maximum value for his expenditure. Accordingly, the necessity of regular maintenance should be fully explained at the time of sale, as well as during after-sale repairs.

MAINTENANCE CHART

The following periodic maintenance is required to prolong the life of the machine.

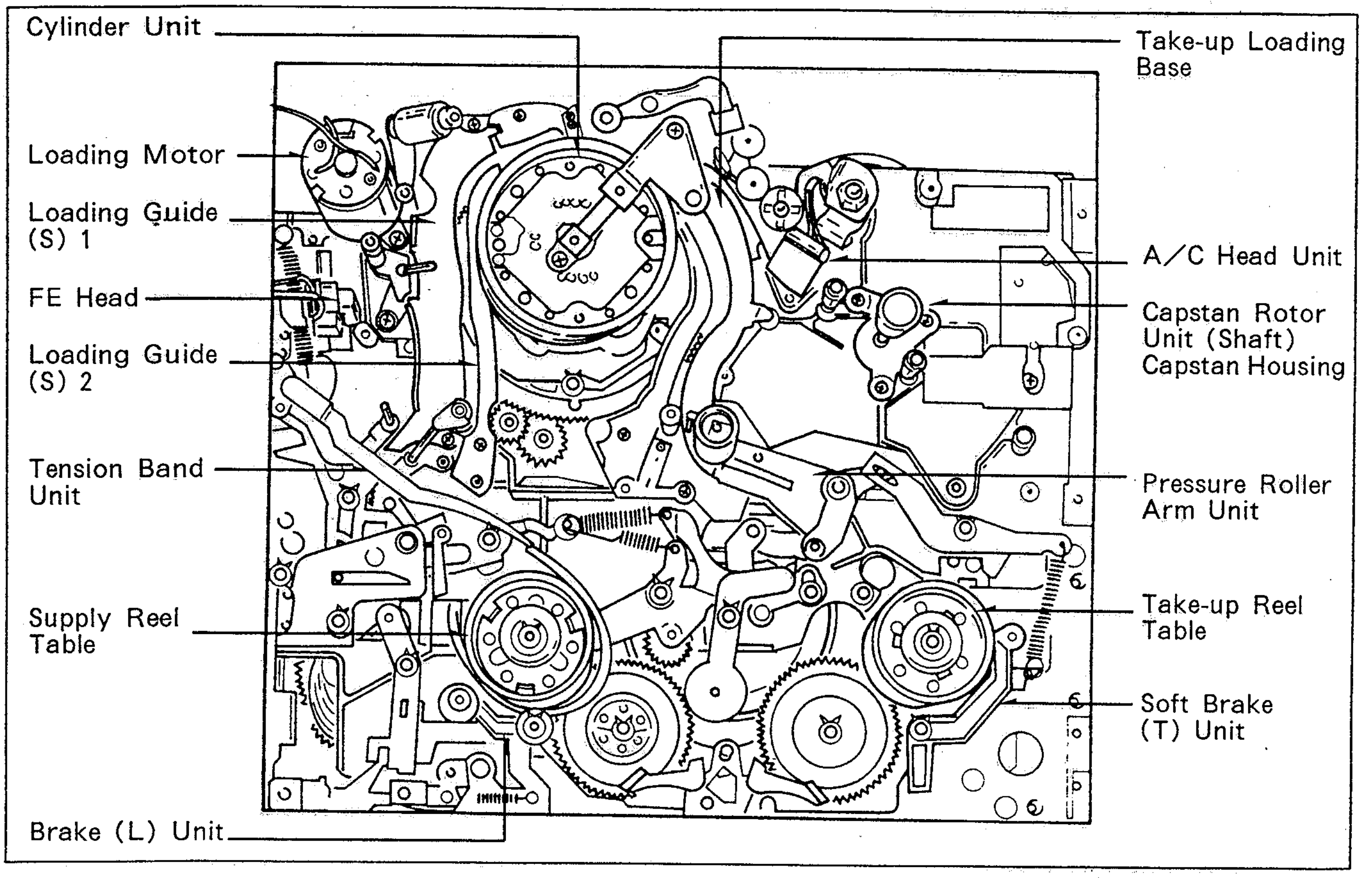
Ref. No. IN P/L	Parts Name	Hour									
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000
—	Tape Transporters	●	●	●	●	●	●	●	●	●	●
257 (2)	A/C Head Unit	●	●	●	●	●	●	●	◎	●	●
282 (2)	FE Head	●	●	●	●	●	●	●	◎	●	●
140 (1)	Cylinder Unit	●	◎	●	◎	●	◎	●	◎	●	◎
123 (1)	Supply Reel Table	●	●	●	●△	●	●	●	◎△	●	●△
126 (1)	Takeup Reel Tuble	●	●	●	●△	●	●	●	◎△	●	●
164 (1)	Capstan Roter U(Shaft)	●	●△	●	●△	●	●△	●	◎△	●	●△
274 (2)	Pinch Roller Arm(1) U	●	◎	●	◎	●	◎	●	◎	●	◎
232 (2)	Capstan Housing								◎		

Ref. No. IN P/L	Parts Name	Hour									
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000
135 (1)	Soft Brake (T) Unit				◎				◎		
247 (2)	Tension Band Unit				◎				◎		
141 (1)	Loading Belt				◎				◎		
166 (1)	Capstan Belt				◎				◎		
242 (2)	Loading Motor Unit				◎				◎		
236 (2)	Take-up Loading Base					■					■
219 (2)	Loading Guide (S)(1)					■					■
220 (2)	Loading Guide (S)(2)					■					■
148 (1)	Cam Gear								■		

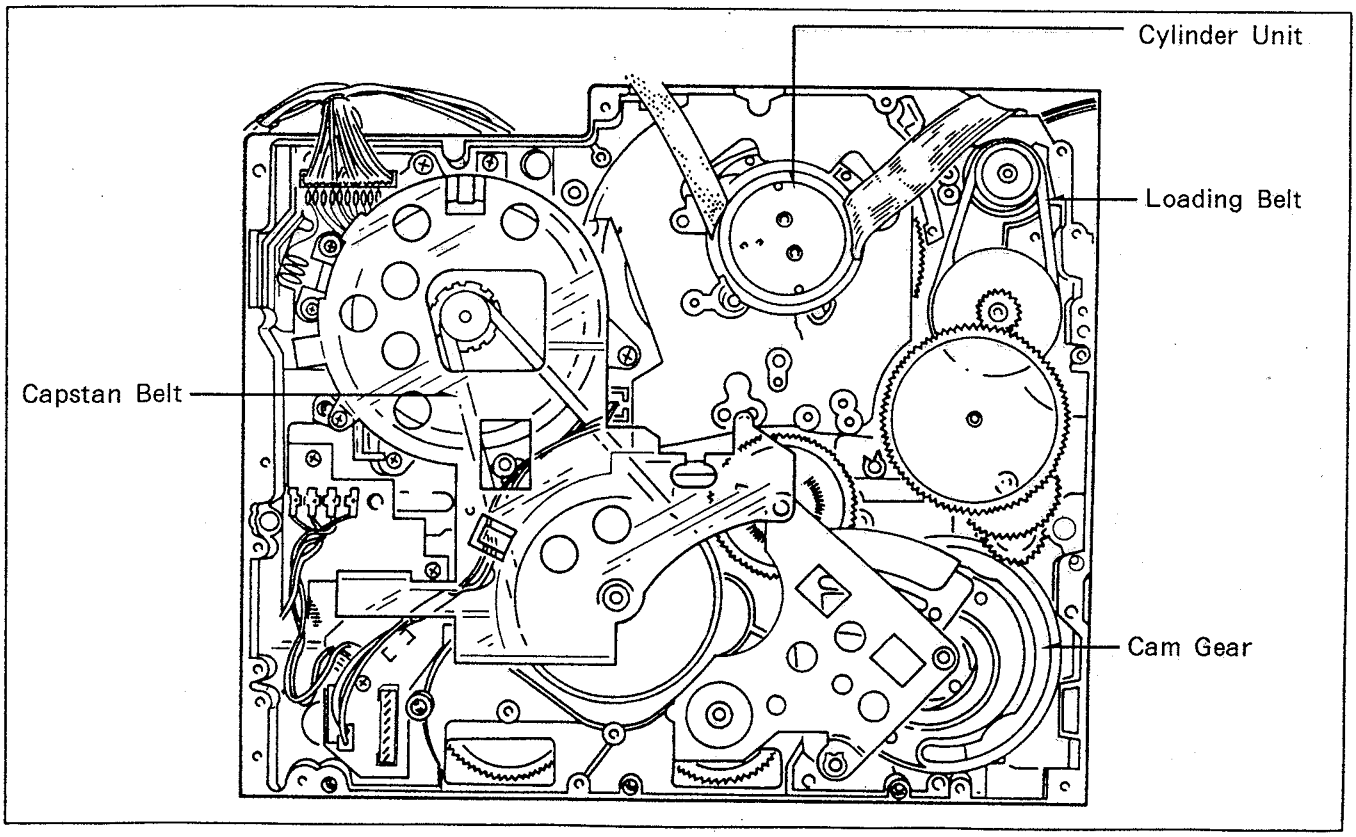
✻ NOTE:

Symbol	Maintenance	Requirement	Remark
●	Cleaning	Ethyl-alcohol or Cleaning Liquid (Purchase locally)	Wipe dirt from the parts using soft cloth impregnated with Ethyl-Alcohol. Note: When cleaning rubber parts, avoid using excessive alcohol since it may accelerate deterioration of these parts. After cleaning with alcohol, wipe the alcohol quickly and thoroughly.
◎	Replacement	———	
△	Lubrication	Hydro HV100 Oil (VFK0131)	Supply one or two drops of oil.
■	Greasing	Molytne Grease (MOR265)	Wipe the old grease and apply new grease.

6-2-2. MECHANICAL PARTS LOCATION


Cylinder Unit
Loading Motor
Loading Guide (S) 1
FE Head
Loading Guide (S) 2
Tension Band Unit
Supply Reel Table
Brake (L) Unit
Take-up Loading Base
A/C Head Unit
Capstan Rotor Unit (Shaft) Capstan Housing
Pressure Roller Arm Unit
Take-up Reel Table
Soft Brake (T) Unit

TOP VIEW


Cylinder Unit
Loading Belt
Capstan Belt
Cam Gear

BOTTOM VIEW

6-2-3. PROCEDURE OF CLEANING OF CYLINDER UNIT

1. Position the video head to clean and hold the upper cylinder to keep it from turning while cleaning.
2. Gently rub the video head in direction of tape travel with the Head Cleaning Stick.
3. Repeat for the other three heads.

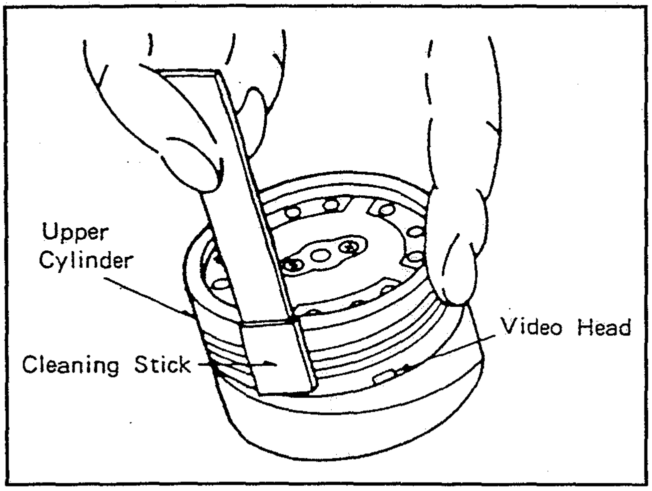


Figure R1

6-2-4. REPLACEMENT OF THE CYLINDER UNIT

Note: Dissaembly method is refer to Section 2 of Service Manual Vol.1.

<Preparation>

1. Remove of left panel and cassette cover.
2. Remove of right panel.
3. Open the Process C.B.A.
4. Remove of mechanical connection C.B.A.

1. Remove 3 screws (A-1), (A-2), (B) and remove the earth plate unit and impedance roller T unit together.

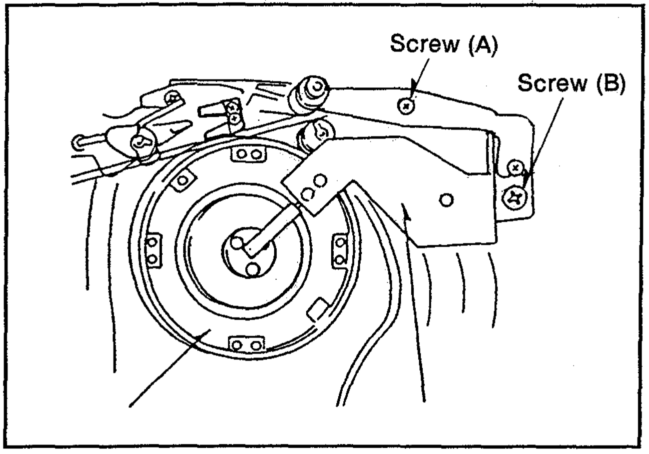


Figure R2

2. Disconnect connector P5002 on the Video C.B.A.
3. Remove the 3 screws (B) and disconnect the connector.
4. Take out the Cylinder unit carefully.

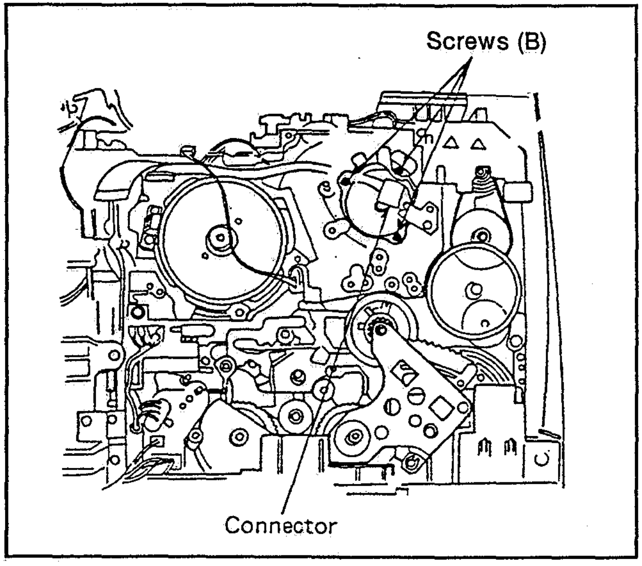


Figure R3

Note: Since there is very little clearance between the Cylinder Unit and the chassis, remove the Cylinder Unit carefully.

5. Reinstall the new Cylinder Unit, tighten the 3 screws and reconnect the connector.

Note:
1. Gently rub the video head in direction of tape travel with Head cleaning stick.
2. After replacement, confirm the performance.
   If any further maintenance is required, perform "TAPE INTER-CHANGE ABILITY ADJUSTMENT".

6-2-5. REPLACEMENT OF CAPSTAN MOTOR UNIT

- * Equipment required:
  Reel Table Height Gauge (VFK0190)
- * Specification ... 0.5 ± 0.05mm

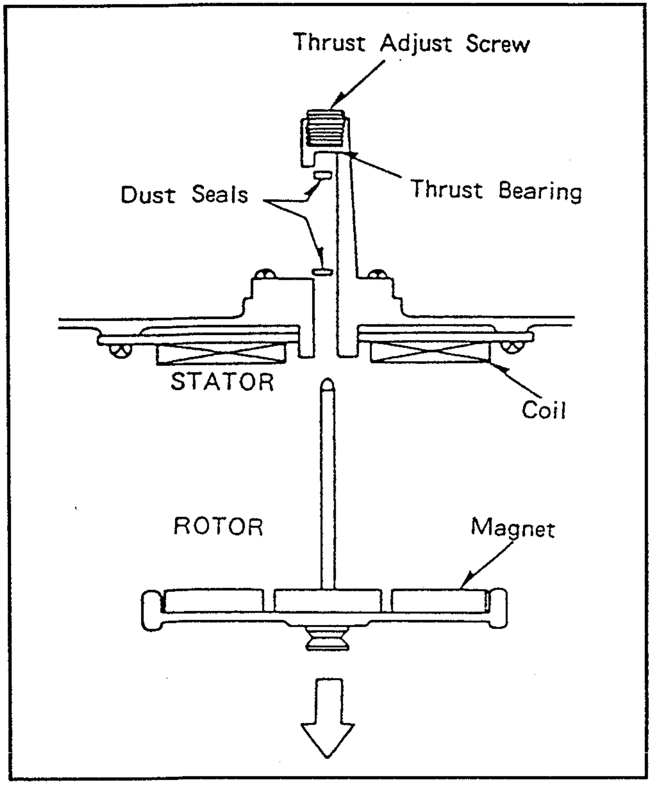

Thrust Adjust Screw
Dust Seals
Thrust Bearing
STATOR
Coil
ROTOR
Magnet

Figure R4

1. Remove 2 screws and take belt cover off. After that remove the capstan belt.
2. Tighten the Thrust Adjust Screw fully and pull the capstan rotor.

Note: In this time pay attention not to lose two pieces of Dust Seal.

3. Replace the new rotor with two pieces of Dust Seal.

Note:
1. Pay attention to the replaced new rotor not to shock because of magnet absorption.
   So hold the rotor firmly and replace it carefully.
2. In this replacement, do not touch the Capstan shaft with any hard material like drivers or tweezers. To prevent scratches and possible tape damage.

4. After replacement wipe off the Capstan shaft to remove oil, grease or dust.
5. Turn Thrust Adjust Screw clockwise till the rotor is just separating from the stator.
6. Turn Thrust Adjust Screw clockwise to another 180 degrees from above position

Note: If the Thrust Adjust Screw is fully opened, you have to pay attention not to lose Thrust Bearing.
When it is set, confirm that the direction of Thrust Bearing is correct as shown below.

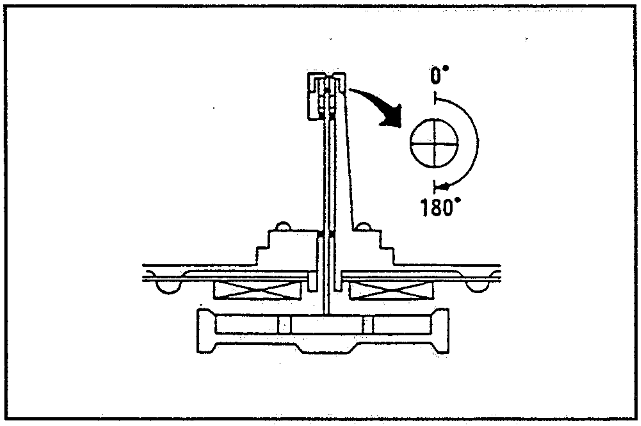


Figure R5

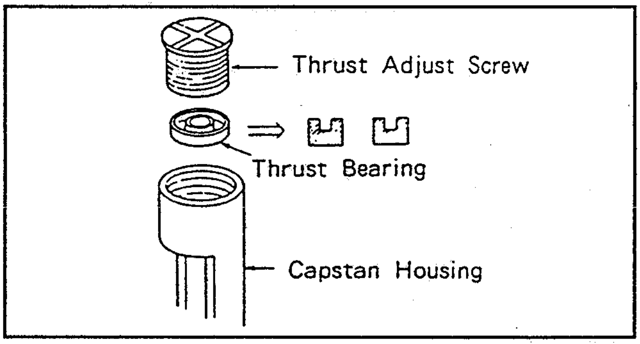

Thrust Adjust Screw
Thrust Bearing
Capstan Housing

Figure R6

6-2-6. REPLACEMENT OF TENSION BAND

1. Remove the cassette compartment.
2. Remove retaining ring and take out the Rew Arm (A) Unit.
3. Remove retaining ring and washer on the soft breake lever S unit.
4. Remove retaining ring and a snap washer and take out the tension Band Unit.

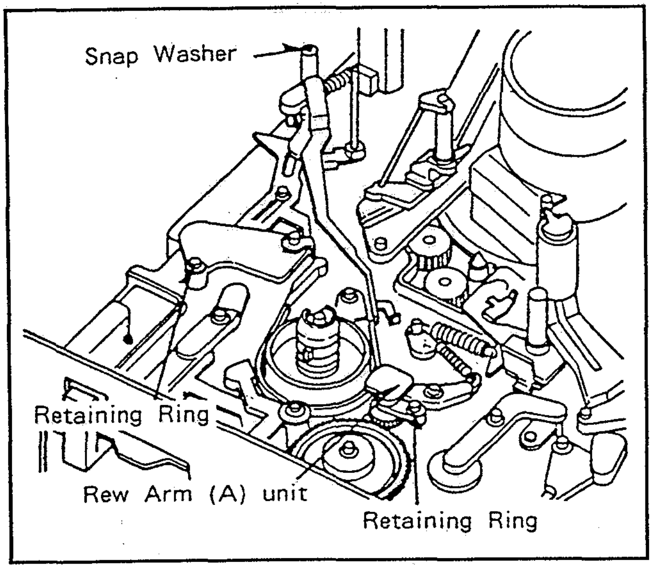

Snap Washer
Retaining Ring
Rew Arm (A) unit
Retaining Ring

Figure R7

5. Remove screw and remove the tension band from the band release arm.
6. Remove retaining ring and remove tension band from tension arm unit.

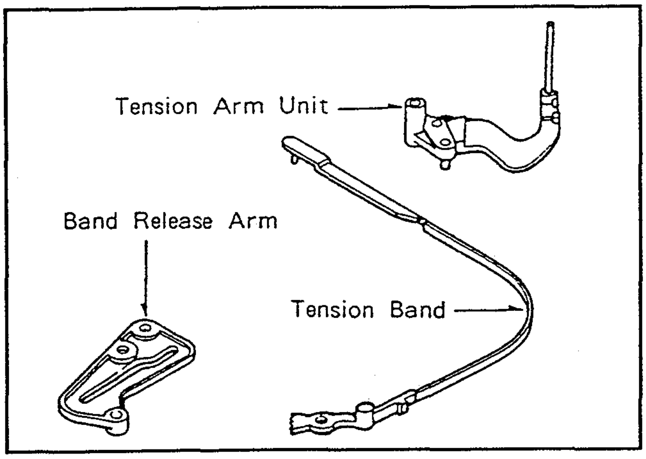
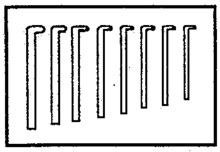
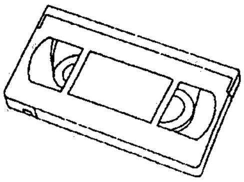
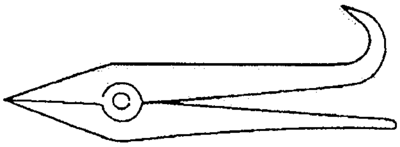
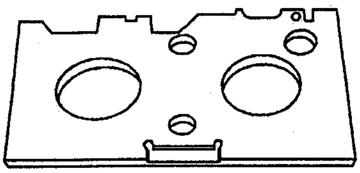
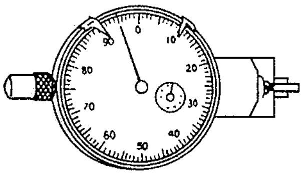
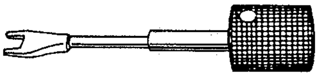
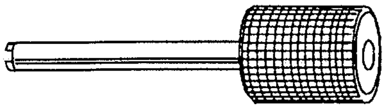
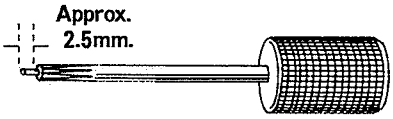
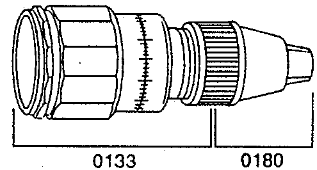
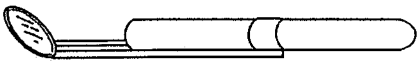
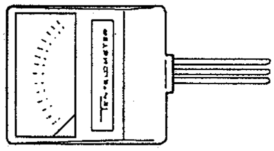
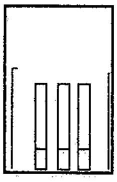
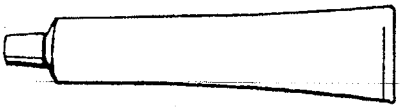
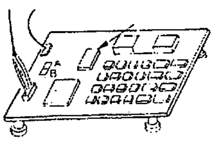
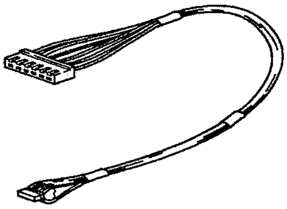
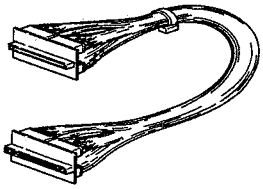

Tension Arm Unit
Band Release Arm
Tension Band

Figure R8

7. Replace the Tension Band by reversing the steps shown above.
8. After replacement, the Tension Post position and Back Tension Adjustment must be confirmed. (refer to step 6-3-13, 6-3-14)

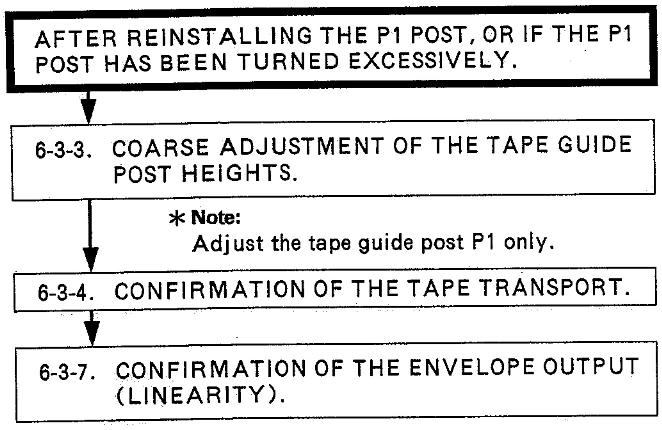
6-3. MECHANICAL ADJUSTMENT PROCEDURES

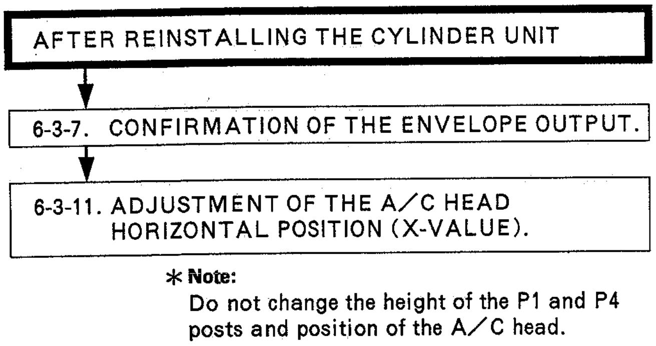
6-3-1. SERVICING FIXTURES & TOOLS

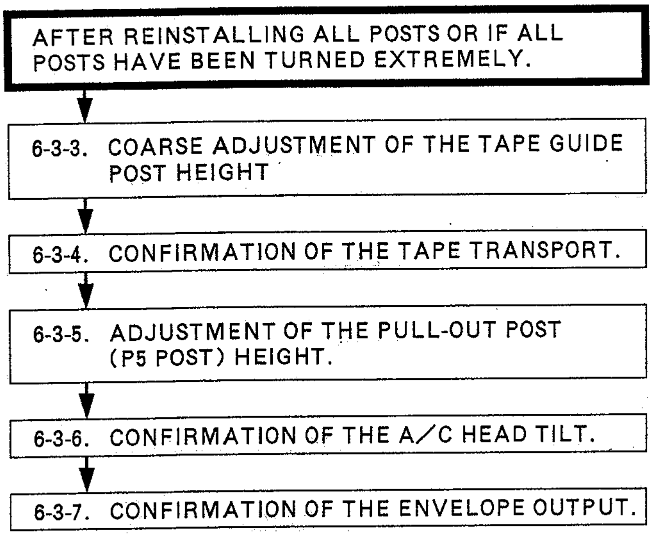
VFK0326 ; Hex. Wrench Set (0.7, 0.9, 1.2, 1.5, 1.6, 2, 2.4, 3 mm) 	VFM8080HQFP (NTSC): VHS Alignment Tape VFM8280HADH (PAL) 	VFK0335 ; Retaining Ring Remover (3mm/4mm) 
VFK0109 ; Post Adjustment Plate or VFK1012 	VFK0190 ; Reel Table Height Fixture 	VFK0328 ; H-Position Adj. Screwdriver 
VFK0329 ; Post Adj. Screwdriver 	VFK0157 ; Fine Adj. Screwdriver  Grind the top portion approximately	VFK0133 ; Dial Torque Gauge VFK0134 ; Adaptor for VFK0133 VFK0180 ; Plastic Clamper Only 
VFM0948 ; Check Light 	VFK0132 ; Back Tension Meter (Tentelometer, Made in U.S.A) 	VFK27 ; Head Cleaning Stick 
MOR265 ; Morlytone Grease 	High Quality Machine Oil < Purchase Locally > (Reel Shaft, Capstan Shaft etc.) Cleaning Liquid ~~(Freon, TF, Alchol)~~ < Purchase Locally > (Tape Transport Rubber Parts etc.)	YWV2310RB99 Logarithmic Gray Scale Chart VFK0546 Hunting Chart VFK0580 J Chart & Ball Chart
VFK0644 ; EVR Fixture *ROM IC VFK1018ROM01 (NTSC) VFK1019ROM01 (PAL) 	VFK0996 ; EVR Extender Cable 	VFK0993 ; 80P Extender Cable 

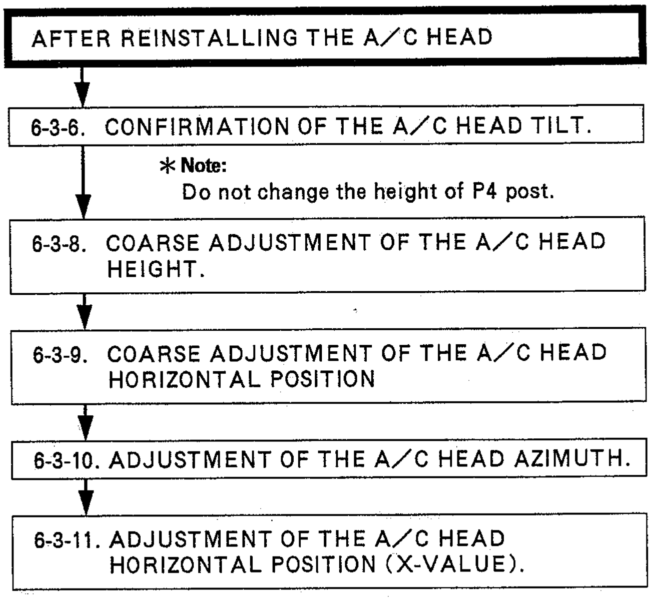
6-3-2. ADJUSTMENT FLOW CHART

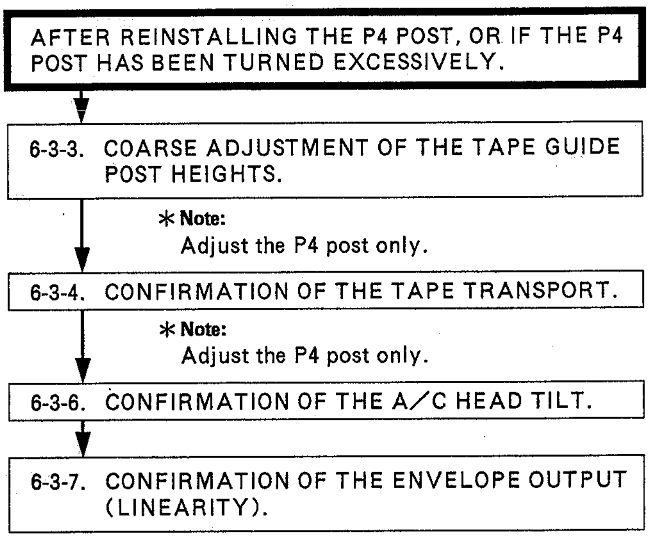
In order to gain access to the items needing service this flow chart describes the order of steps for adjusting the tape guide posts and A/C head.

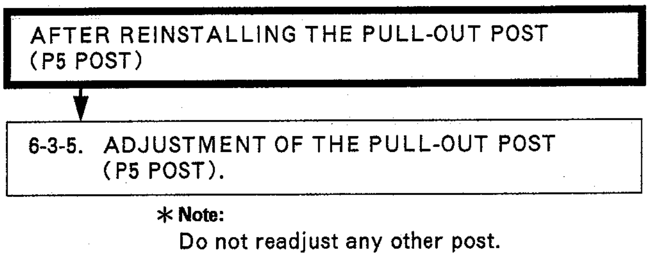

AFTER REINSTALLING THE P1 POST, OR IF THE P1 POST HAS BEEN TURNED EXCESSIVELY.
6-3-3. COARSE ADJUSTMENT OF THE TAPE GUIDE POST HEIGHTS.
* Note:
Adjust the tape guide post P1 only.
6-3-4. CONFIRMATION OF THE TAPE TRANSPORT.
6-3-7. CONFIRMATION OF THE ENVELOPE OUTPUT (LINEARITY).


AFTER REINSTALLING THE CYLINDER UNIT
6-3-7. CONFIRMATION OF THE ENVELOPE OUTPUT.
6-3-11. ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION (X-VALUE).
* Note:
Do not change the height of the P1 and P4 posts and position of the A/C head.


AFTER REINSTALLING ALL POSTS OR IF ALL POSTS HAVE BEEN TURNED EXTREMELY.
6-3-3. COARSE ADJUSTMENT OF THE TAPE GUIDE POST HEIGHT
6-3-4. CONFIRMATION OF THE TAPE TRANSPORT.
6-3-5. ADJUSTMENT OF THE PULL-OUT POST (P5 POST) HEIGHT.
6-3-6. CONFIRMATION OF THE A/C HEAD TILT.
6-3-7. CONFIRMATION OF THE ENVELOPE OUTPUT.


AFTER REINSTALLING THE A/C HEAD
6-3-6. CONFIRMATION OF THE A/C HEAD TILT.
* Note:
Do not change the height of P4 post.
6-3-8. COARSE ADJUSTMENT OF THE A/C HEAD HEIGHT.
6-3-9. COARSE ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION
6-3-10. ADJUSTMENT OF THE A/C HEAD AZIMUTH.
6-3-11. ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION (X-VALUE).


AFTER REINSTALLING THE P4 POST, OR IF THE P4 POST HAS BEEN TURNED EXCESSIVELY.
6-3-3. COARSE ADJUSTMENT OF THE TAPE GUIDE POST HEIGHTS.
* Note:
Adjust the P4 post only.
6-3-4. CONFIRMATION OF THE TAPE TRANSPORT.
* Note:
Adjust the P4 post only.
6-3-6. CONFIRMATION OF THE A/C HEAD TILT.
6-3-7. CONFIRMATION OF THE ENVELOPE OUTPUT (LINEARITY).


AFTER REINSTALLING THE PULL-OUT POST (P5 POST)
6-3-5. ADJUSTMENT OF THE PULL-OUT POST (P5 POST).
* Note:
Do not readjust any other post.

6-3-3. COARSE ADJUSTMENT OF THE TAPE GUIDE POST HEIGHT (P1,P2,P3 AND P4)

* Equipment Required:
Post Adjustment Plate VFK0191
Reel Table Height Gauge VFK0190
Nut Driver (Purchase locally)
Post Adjustment Screwdriver VFK0329

1. Remove the cassette compartment from the mechanical chassis.
2. Place the Post Adjustment Plate over the reel tables. (Figure M1) Confirm that the Post Adjustment Plate is firmly seated.

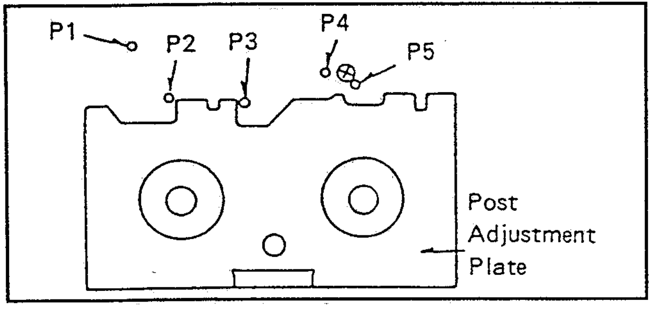


Figure M1

3. Lower all 4 tape guide posts so that the lower tape guide on each post is below the top surface of the adjustment plate.
   Use the post Adjustment screwdriver to lower posts P2 and P3, and the Nut Driver to lower Posts P1, P4 and P5.
4. Place the Reel Table Height Gauge on the Post Adjustment Plate and lower the scraper so that it touches the plate (Figure M2).

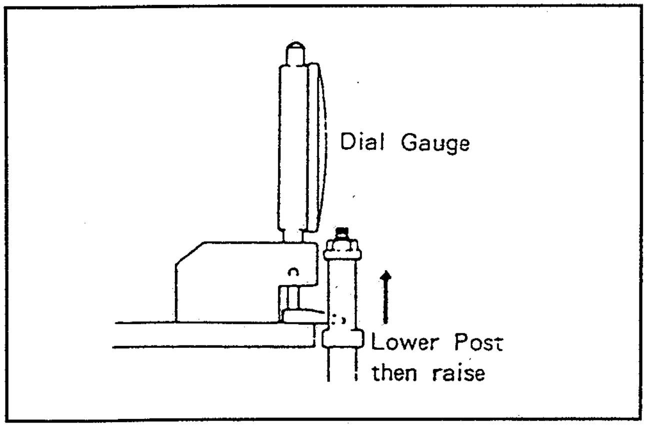


Figure M2

5. Place the side of the scraper against the each post as shown in Figure M3, set the gauge to zero, then slowly raise the post until the lower tape guide just touches the bottom of the scraper. Use the gauge to determine the exact point at which the lower tape guide touches the scraper. (Figure M3).

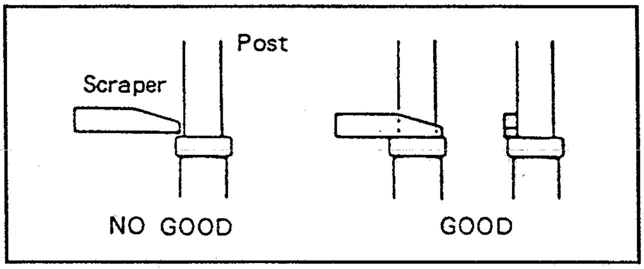


Figure M3

6-3-4. CONFIRMATION OF THE TAPE TRANSPORT (TAPE GUIDE POSTS)

Note:
1. The tape guide posts have been precisely adjusted at the factory. Therefore, normally do not change the height of P1, P4 and P5 posts. The following adjustment is required only when replacing the posts.
2. If curling is apparent proceed to the P4 post, wipe dirt from the pressure roller and capstan shaft using a soft cloth impregnated with Freon TF or cleaning liquid.
3. The adjustment of the post height is required only it one has been replaced.

* Equipment Required
Post Adjustment Screwdriver VFK0329
Check Light VFK0948
Nut Driver (Purchase locally)

1. To prevent the alignment tape from being damaged, use a normal cassette tape for this procedure.
   Play back the normal cassette tape and confirm that the tape travels without any curling at the edges of all the posts by using the check light. (Figure M4 and Figure M5).

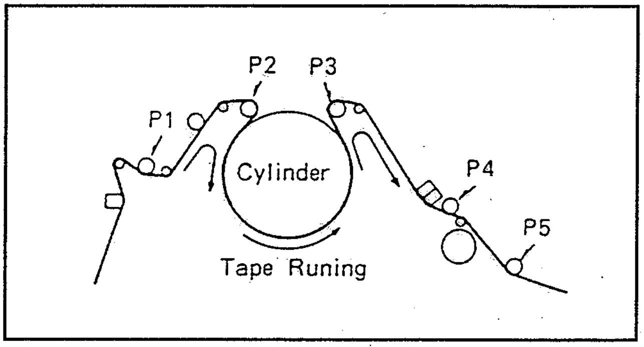


Figure M4

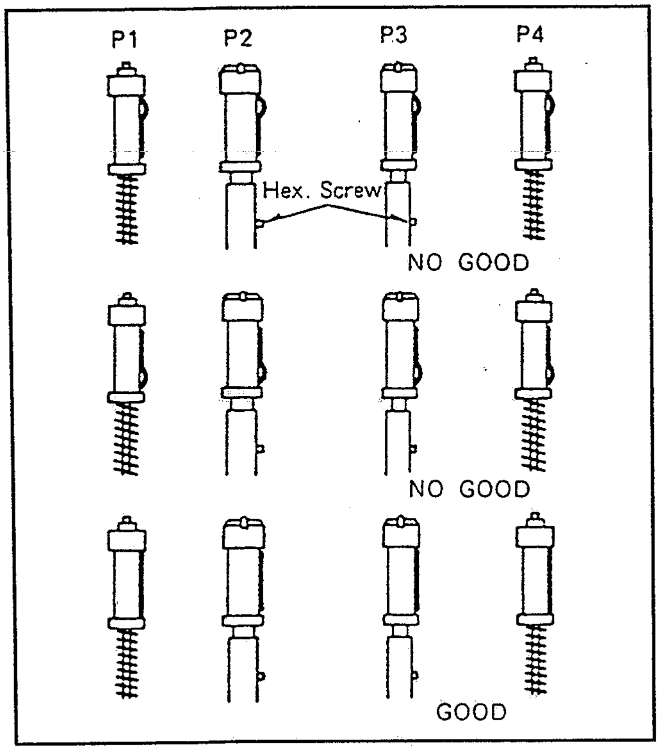


Figure M5

2. If curling is apparent, adjust the height of posts by turning the top of post with the post adjustment screwdriver (posts P2 and P3) or the nut-driver (Posts P1 and P4)(Figure M4 and M5).
3. After adjusting the P4 post, adjustment of the pull-out post (P5) is required.
   (Refer to "ADJUSTMENT OF THE PULL-OUT POST HEIGHT".)
4. If the tape curling cannot be corrected by adjusting the tape guide posts, then adjustment of the A/C head tilt may be needed.

6-3-5. ADJUSTMENT OF THE PULL OUT POST (P5 POST) HEIGHT

Note: 1. This adjustment should be performed only after adjusting tape guide post P4 as the height of the pull-out post is based on the height of post P4.

* Tools and Equipment Required:
Post Adjustment Plate VFK0191
Reel Table Height Gauge VFK0190
Check Light VFK0948
Nut Driver (Purchase locally)

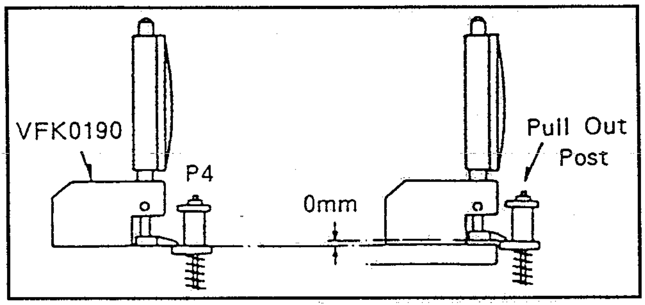


Figure M6

1. Remove the cassette compartment by removing 4 screws.
2. Place the Post Adjustment plate over the reel tables.
3. Place the Reel Table Height Gauge on the tape guide post P4, lower the scraper so that it touches the lower edges of P4, then set the gauge to zero ("0")(Figure M6).
4. Slightly lower the pull-out post by turning the nut on the post clockwise with the nut driver, and set the side of the scraper against the post as shown in Figure M7.
5. Slowly turn the nut on the post counterclockwise until the gauge reads 0mm (Figure M6).
6. Confirm there is no tape curling at P4 post during reverse mode by using the check light.
   If tape curling occurs, Go back to step 3.

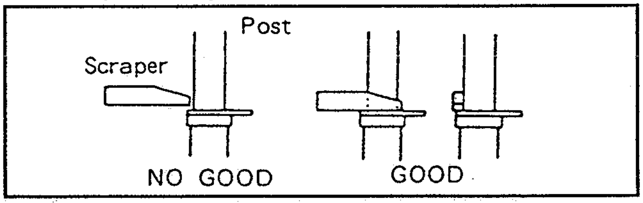


Figure M7

6-3-6. CONFIRMATION OF THE A/C HEAD TILT

Note: This procedure should be performed after replacing the A/C head and pressure roller, and adjusting the height of the tape guide post (P4).
(Refer to "COARSE ADJUSTMENT OF THE TAPE GUIDE POST HEIGHT").

* Tools and equipment Required:
Hex. Wrench Set VFK0326
Nut Driver (purchase locally)

1. Play back the beginning portion of T180 (NTSC) / E240 (PAL) blank cassette tape and confirm that the tape runs between lower and upper limiters of the P4 post. If there is waving or filling in the lower edge or top edge of the tape, correct the tilt of the A/C head by turning the screw located behind the A/C head (Figure M8).

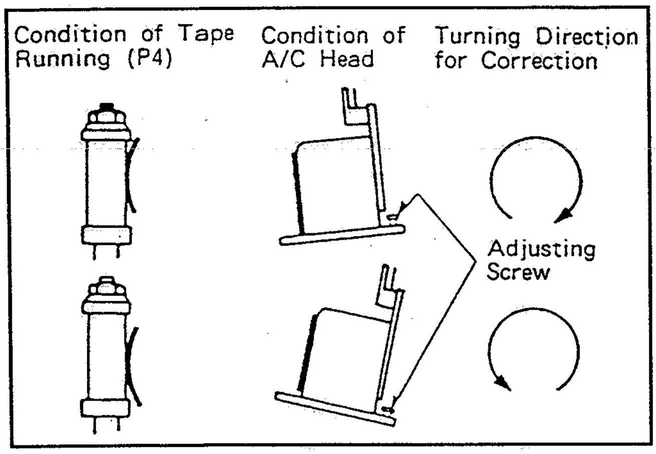

Condition of Tape Running (P4)
Condition of A/C Head
Turning Direction for Correction
Adjusting Screw

Figure M8

2. If the tape curling cannot be removed by adjusting the A/C head tilt, then readjustment of the height of the tape guide post (P4) may be needed.

Note: 1. The tape guide post (P4) has been precisely adjusted at the factory. Therefore, normally the tape guide post (P4) readjustment is not required to eliminate the tape curling.
2. After adjusting the A/C head tilt, the A/C head height adjustment is required.

6-3-7. CONFIRMATION OF THE ENVELOPE OUTPUT (LINEARITY)

Note: Before playing back the alignment tape, play back a normal cassette tape and confirm correct transport. (Refer to "CONFIRMATION OF THE TAPE TRANSPORT".)

* Tools and Equipment Required:
Post Adjustment Screwdriver VFK0329
Alignment Tape . . . . . VFM8080HQFP (NTSC)
VFM8080HADH (PAL)

1. Connect the scope to TP3009 on the Video C.B.A. and TP3006 on the same C.B.A. to External trigger of the scope.
2. Play back the monoscope portion of the alignment tape.
3. Press the Tracking Control buttons and adjust for maximum RF envelope.
4. If the RF envelope appears like example "A" or "B" in Figure M9, then adjustment of tape guide post (P2: Entrance) is necessary.
5. Adjust the tape guide post (P2) with the post adjustment screwdriver so that the RF envelope waveform at the entrance portion becomes flat as shown "C" in Figure M9. (See Figure M12 also).

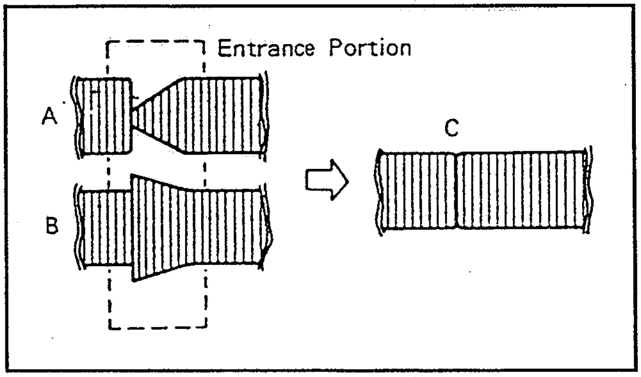


Figure M9

6. If the RF envelope appears like example "D" or "E" in Figure M10, then adjustment of the tape guide post (P3: Exit) is necessary.
7. Adjust the tape guide post (P3) in the same manner as the P2 post so that the exit portion becomes flat as shown in "F" in Figure M10.

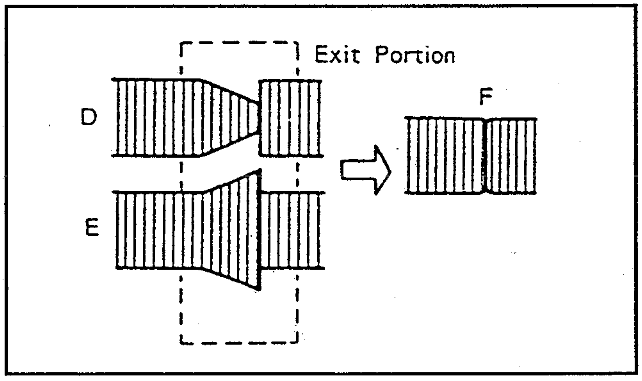


Figure M10

8. Set the Tracking Control buttons from one end postion to another end.
The variation of RF envelope should be nearly parallel as shown in Figure M11.
9. Press the Tracking buttons and adjust for maximum RF envelope.
If the RF envelope does not meet these specs, V1/V 0.7, V2/V 0.8, then repeat steps 1-9 of item 3-2-5. again (Figure M13).

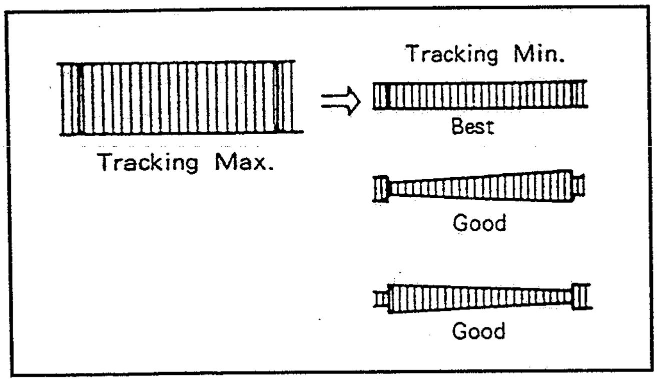

Tracking Min.
Best
Tracking Max.
Good
Good

Fig M11

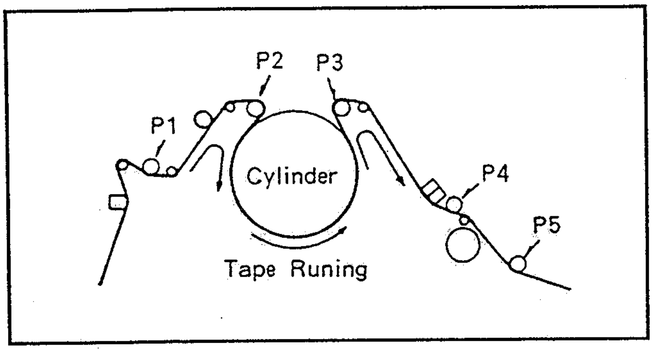

P2
P3
P1
Cylinder
P4
P5
Tape Runing

Figure M12

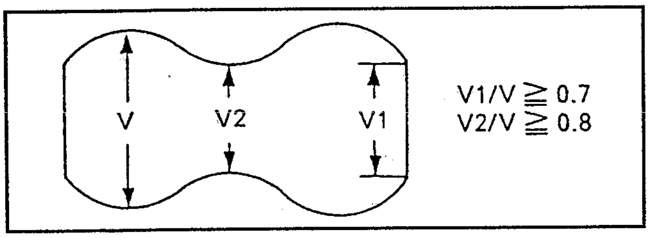

V
V2
V1
V1/V ≧ 0.7
V2/V ≧ 0.8

Figure M13

10. Set the Tracking buttons form one end to another end again, then set back to the Fix position by pressing both tracking buttons simultaneously or switching the power off and on again.
    At the Fix position, the RF envelope waveform should be at maximum. If it is not at maximum then "ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION" is necessary. (Refer to "FINE ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION".)

6-3-8. COARSE ADJUSTMENT OF THE A/C HEAD HEIGHT

Note: This procedure should be performed only when the A/C Head is replaced.

* Tools and Equipment Required:
Check Light VFK0948
Nut Driver (Purchase locally)

1. Looking at the lower edge of the control head within the tape running, ensure that lower edge of the tape runs along 0.25mm in from the lower edge of the control head. If it doesn't slightly turn the nut (A) in either direction to correct clockwise to lower the head and counterclockwise to raise it.

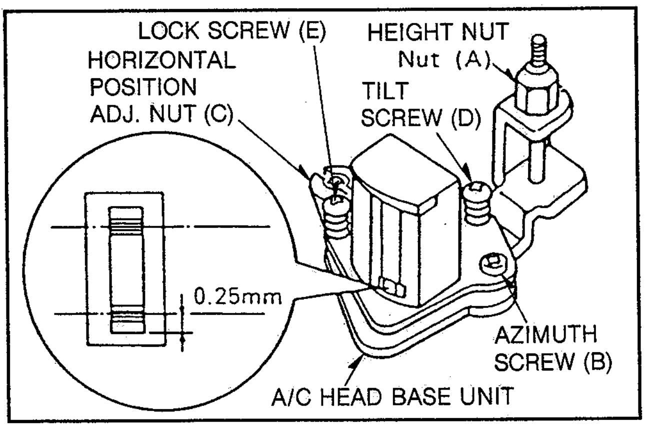

LOCK SCREW (E)
HEIGHT NUT
Nut (A)
HORIZONTAL
POSITION
ADJ. NUT (C)
TILT
SCREW (D)
0.25mm
AZIMUTH
SCREW (B)
A/C HEAD BASE UNIT

Figure M14

6-3-9. COARSE ADJUSTMENT OF THE A/C HEAD HORIZONTAL POSITION

Note: This procedure should be performed only when the A/C head is replaced.

1. Connect the scope CH1 to TP3009 and CH2 to audio output.
2. Play back the alignment tape [the portion for the A/C head horizontal adjustment (coarse)].
3. Set the tracking control buttons to Fix position by pressing both tracking buttons simultaneously.
4. Adjust the adjustment nut (C) so that the phase of audio drop-out and RF video drop-out becomes as close as possible.
5. Adjust the adjustment nut (C) so that the center of RF envelope level becomes maximum.
6. Confirm the phase of RF video drop-out and audio drop-out should be less than 15 msec.

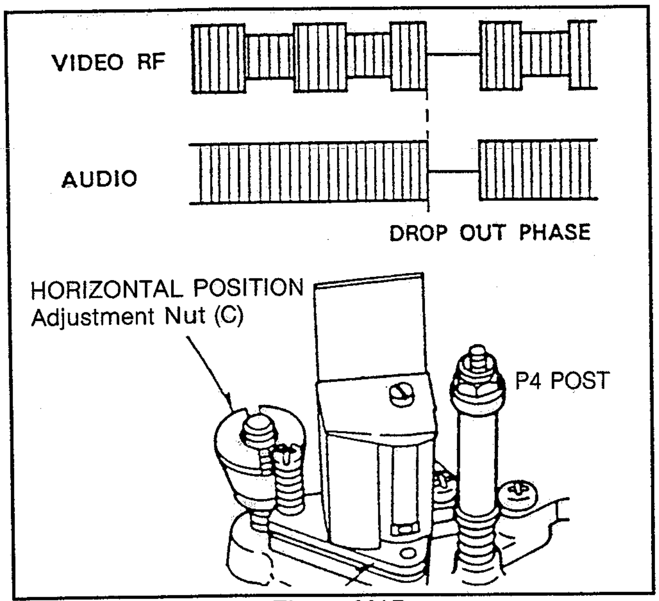


Figure M15

6-3-10. ADJUSTMENT OF THE A/C HEAD TILT AND AZIMUTH

Note: This procedure should be performed only when the A/C Head is replaced and posts height are readjusted.

- * Tools and Equipment Required:
  Nut Driver (Purchase locally)
  Alignment Tape ..... VFM8080HQFP (NTSC)
  VFM8180HADH (PAL)

1. Connect the scope CH1 to the audio CH1 output and CH2 to audio CH2 output.
2. Play back the alignment tape (2nd portion (Normal Audio 6KHz)).
3. Adjust the screw (B) so that the phase of both channels match as FigureM16
4. Then adjust the screw (D) so that the audio output level is maximized.
5. Tighten the lock screw (E) so that the phase of both channels match.

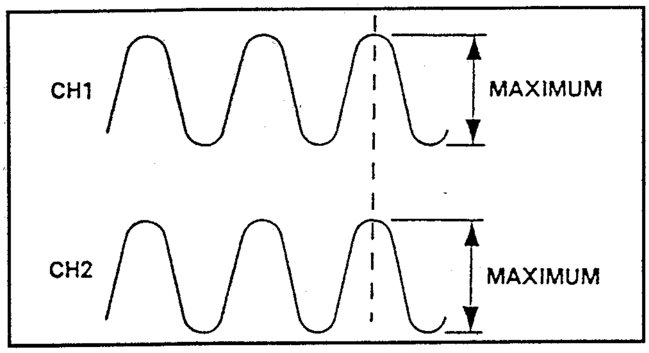


Figure M16

6-3-11. ADJUSTMENT OF A/C HEAD HORIZONTAL POSITION

Note: This procedure should be performed only when the A/C head is replaced and after performing the tape interchangeability adjustment.

- * Tools and Equipment Required:
  H. Position Adj. Fixture VFK0328
  Alignment Tape ..... VMF8080HQFP (NTSC)
  VMF8180HADH (PAL)

1. Set the Tracking Control buttons to Fix position by pressing both tracking buttons simultaneously or swithcing power off and on again.
2. Connect the scope CH1 to TP3009 on the Video C.B.A., and TP3006 on the same C.B.A. to Ext trigger the scope.
3. Play back the Monoscope pattern of the alignment tape.
4. Adjust the adjustment nut so that the RF envelope output level becomes is maximized at the Fix position (Figure M17).
5. Set the Tracking buttons from one end position to another end then back to Fix position by pressing both tracking buttons simultaneously. Confirm that the RF envelope output level is maximized (more than 95%) at the Fixed position (Figure M18).

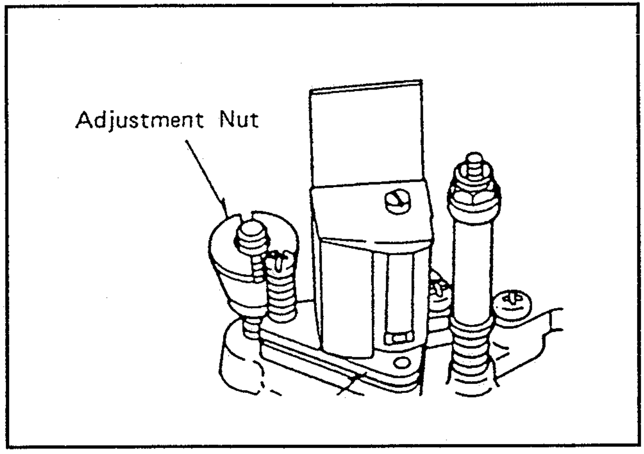


Figure M17

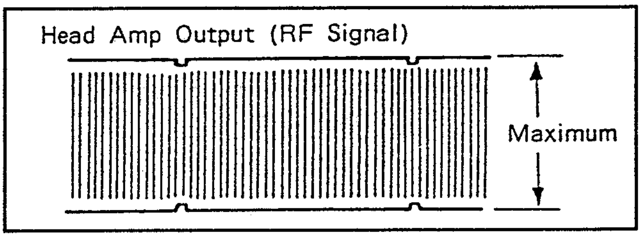


Figure M18

6-3-12. CONFIRMATION OF BRAKE TORQUE

- Equipment Required:
  Dial Torque Gauge VFK0133
  Adaptor for Gauge VFK0134
- Specification: ----- See spec table (Figure M19)

1. Remove the cassette compartment by unscrewing 4 screws.
2. Attach the adaptor to the torque gauge and place the unit in STOP mode.
3. Place the torque gause on the reel table. The weight of gauge should not rest on the reel table.

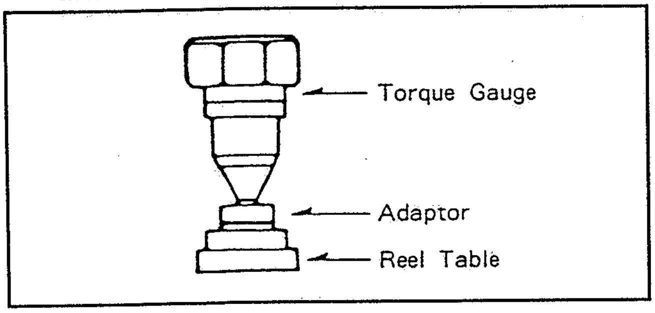
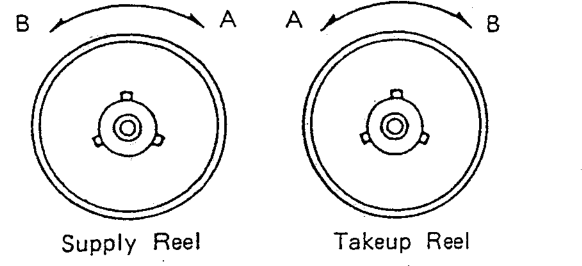

Torque Gauge
Adaptor
Reel Table

Figure M19

4. Turn torque gauge in either direction indicated in the Figure M19, and read the gauge when the brake begins slipping.

Note: If proper brake torque can not be obtained, check both take-up and supply clutch gear.


B
A
A
B
Supply Reel
Takeup Reel

	A	B
Takeup	28+–8g–cm	28+–8g–cm
Supply	28+–8g–cm	28+–8g–cm.

Figure M20

6-3-13. TENSION POST POSITION ADJUSTMENT

- Specification: ----- 2.4mm ~ 2.9mm

1. Remove the Cassette Up unit by removing 4 screws. (Refer to the disassembly procedures titled in Removal of the Cassette Up Unit). Place the unit in Play mode by rotating Drive Gear (A) clockwise as shown below.

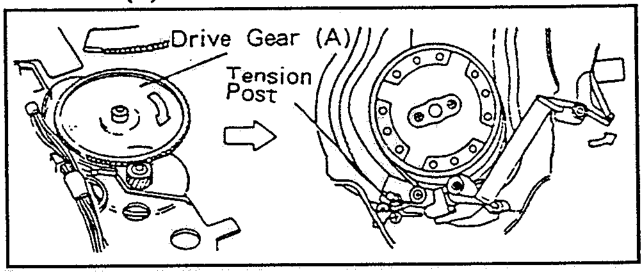

Drive Gear (A)
Tension Post

Figure M21

Note: In this case, make sure that the power is not applied.

2. Loosen the screw (A) a little bit and adjust the Tension Post adjustment plate so that the "Distance (A)" shown below becomes just meets the specification (2.4mm ~ 2.9mm).
3. Tighten the screw (A) to set it.

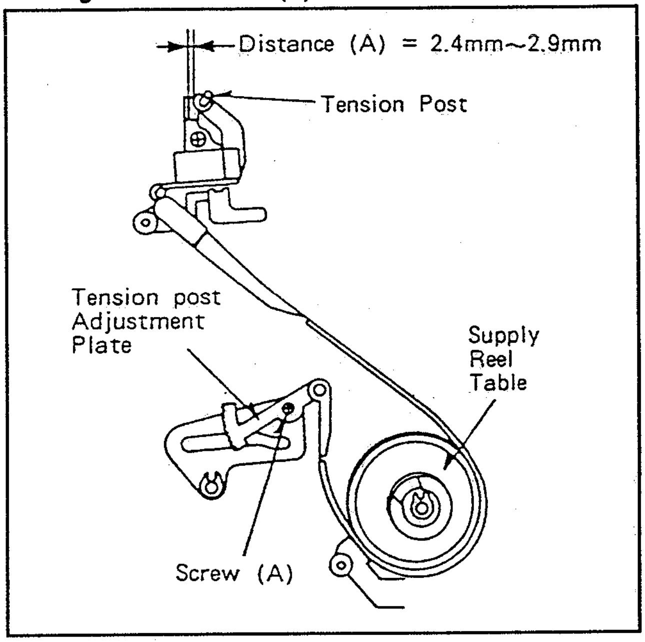

Distance (A) = 2.4mm~2.9mm
Tension Post
Tension post Adjustment Plate
Supply Reel Table
Screw (A)

Figure M22

6-3-14. BACK TENSION ADJUSTMENT

- * Equipment Required:
  Back Tension Meter VFK0132
  VHS Cassette Tape (120min)
- * Specification: ----- 19~23g

1. Play back the cassette tape from the beginning and wait until the tape movement becomes stable. (for approx. 1-~20 seconds) is stabilized.
2. Insert the Back Tension Meter into the path of a tape, and measure if the back tension is within specification as shown in Figure M23.

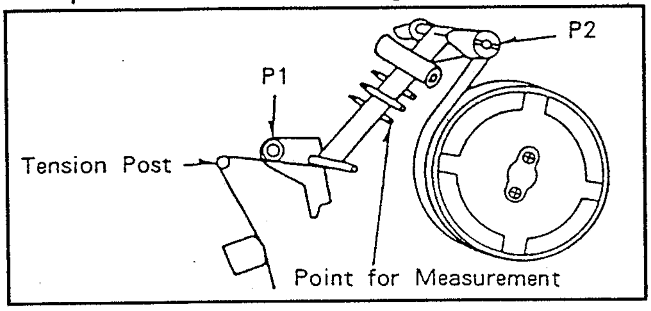


Figure M23

Note:
1. While measuring, make sure that the three probes of the meter are all in good contact with the tape.
2. As the tension meter is very sensitive, we recommend taking 3 separate readings.
3. If it is out of specification, change the spring notch as shown in Figure M24.

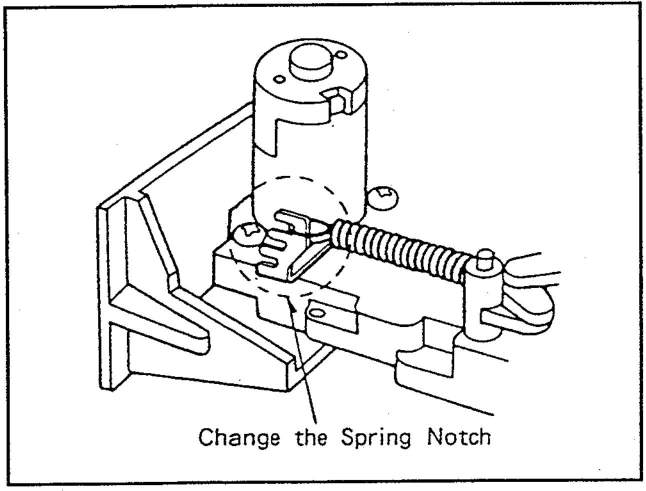


Figure M24

6-3-15. REEL TABLES HEIGHT ADJUSTMENT

- * Equipment Required:
  Post Adjustment Plate VFK0191
  Reel Table Height Gauge VFK0190
- * Specification ----- 0~0.15mm

Note: Cut-out on Post Adjustment Plate is reference of reel table height and their height is measured based on this reference.

1. Place the post adjustment plate on the reels, and put the Gauge on the plate. Set the gauge to zero "0" with the foot scraper of the gauge touching the cut-out portion of the plate.

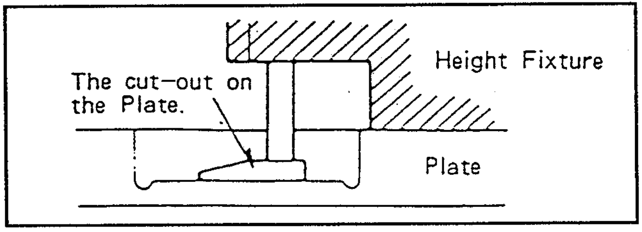


Figure M25

2. Then measure the height of reel table and confirm the difference performed in step 1 as shown below. Do the same for the other reel table.

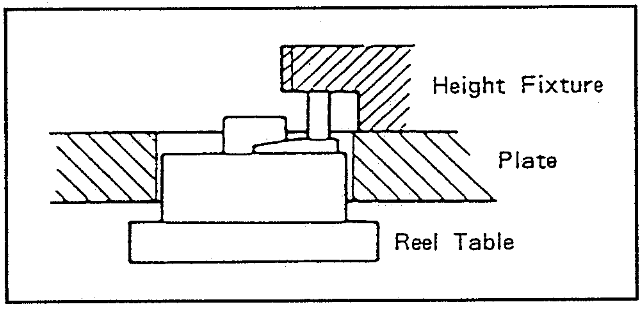


Figure M26

3. If a height difference in readings between the cut-out portion of plate and reel tables is not 0~-0.15mm (height or lower), adjust the height of the reel to obtain specified height.
4. For adjustment add or take out a washer.

6-3-16. ADJUSTMENT OF CAPSTAN FG HEAD GAP

- Specification ----- 0.17~0.18mm

1. Slightly loosen the 2 screws.
2. Put the paper which is used for cover page of this volume into the gap between F.G.Head and Capstan rotor (The thickness of the cover page is approx 0.17mm).
3. After adjustment, tighten 2 screws.

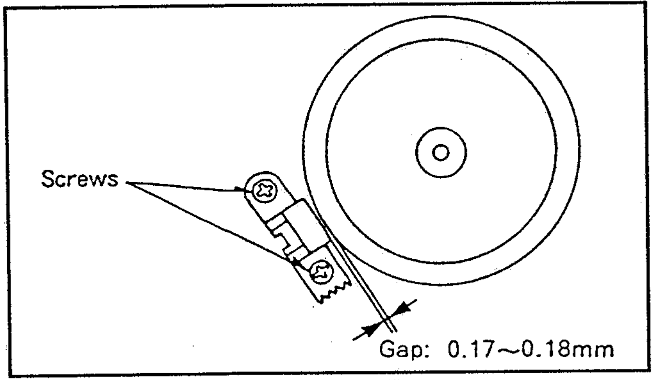


Figure M27

Note: Do not touch the surface of rotor and keep any magnetic material away.

6-3-17. TAKE UP IMPEDANCE ROLLER POSTION ADJUSTMENT

1. Place the unit in play postion.
2. loose 2 screw (A) (B) a little bit and adjust the distance between the impedance roller and the fixed post so that the dislance is 0.5 ~ 0.7mm.
3. Tighten the both screws.
4. Set the unit back to the stop position and play the tape. confirm rotation of the inpedance roller and confirm the tape is touchies the face of the inpedance roller during forward and reverse tape travel.

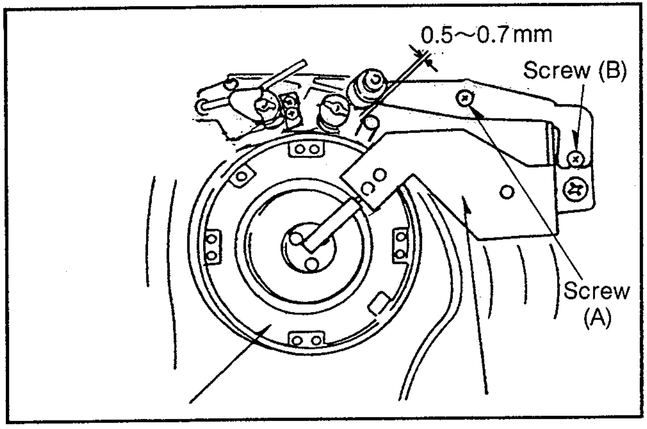


Figure M28

6-4. ASSEMBLY ADJUSTMENT PROCEDURES OF MECHANISM

The mechanism of this model is mostly engaged to the System Control Circuit, through the mode select switch.
Therefore the relationship between the mode select switch and the cam gear decides all further mechanical movement of the mechanical parts such as levers, gears, rollers and so on.
If these parts are fixed in properly, the unit will be unloaded or compulsorily stopped.
And it will result being damage to any mechanical or electrical parts.

6-4-1. PROCEDURES FOR ASSEMBLING LOADING RING AND LOADING GEARS

1. Insert a ring guide sleeve onto the 3 shaft on the chassis.
2. Insert Loading Ring T (1) unit and a Loading Gear (B) with cut washer so that both triangle marks line up as shown below.

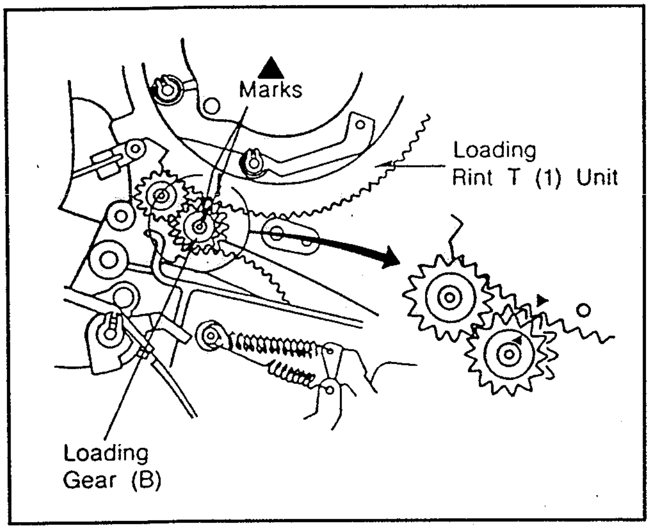


Figure M29

3. Insert loading guide roller onto 3 shaft.
4. Install a Loading Gear (A) with cut washer and next set a Loading Ring S (1) Unit so that the holes of Loading Ring S (1) Unit and T (1) Unit line on as shown below.
5. Install pressure spring inserted between loading ring S (1) unit and T (1) unit then set both loading ring units with washers and retaining rings.

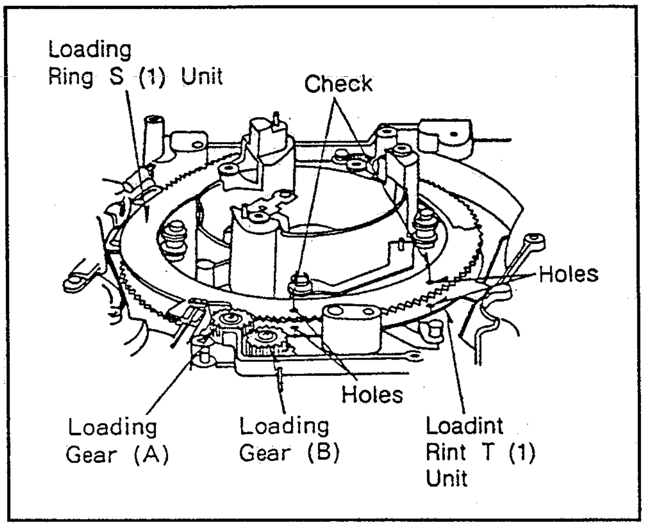


Figure M30

Note: Pay attention that the washers are remaining under the loading gears or any other parts.

6-4-2. PROCEDURES FOR ASSEMBLING TAKE-UP LOADING GUIDE AND TAKE-UP LOADING POST UNIT

1. Install Loading Guide T unit then tighten 3 screws.
   The small projection of a Loading Ling T unit must be inserted into gap of Loading Guide T unit.

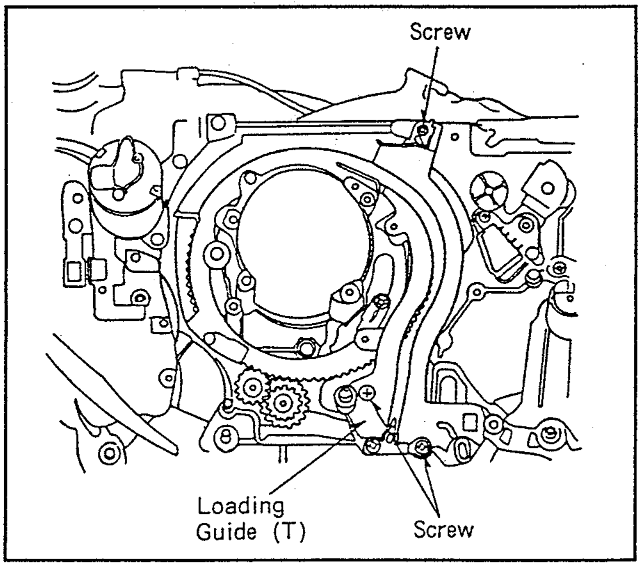


Figure M31

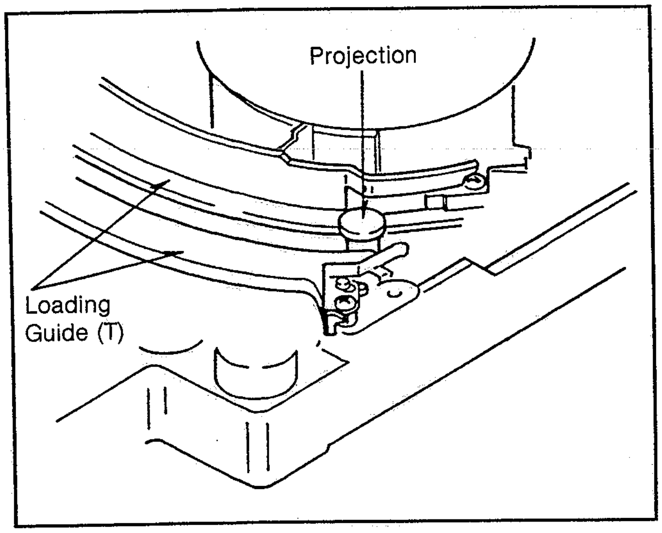

Projection
Loading Guide (T)

Figure M32

2. Fix a Take-up Side Loading Post unit holding the Small projection of the Loading Ling T unit and install at shaft Holder Unit.
3. Install the take up shaft holder angle and tighten a screw.

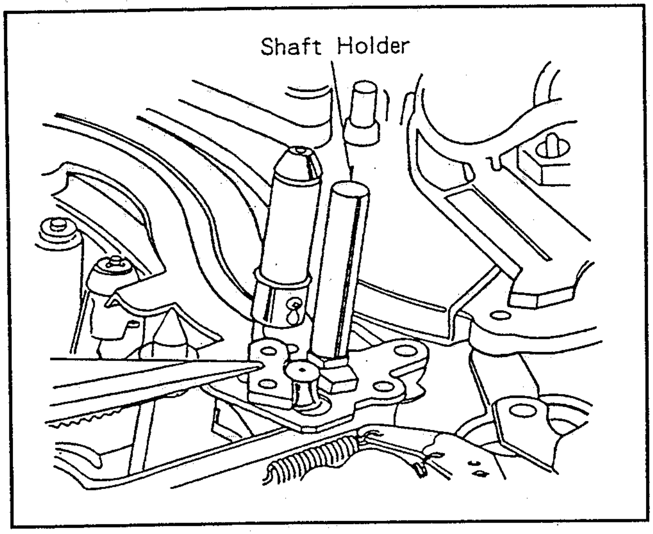

Shaft Holder

Figure M33

6-4-3. PROCEDURES FOR ASSEMBLING SUPPLY LOADING GUIDES AND SUPPLY LOADING POST UNIT

1. Install the Loading Guide S-1 and S-2. Then tighten 4 screws.

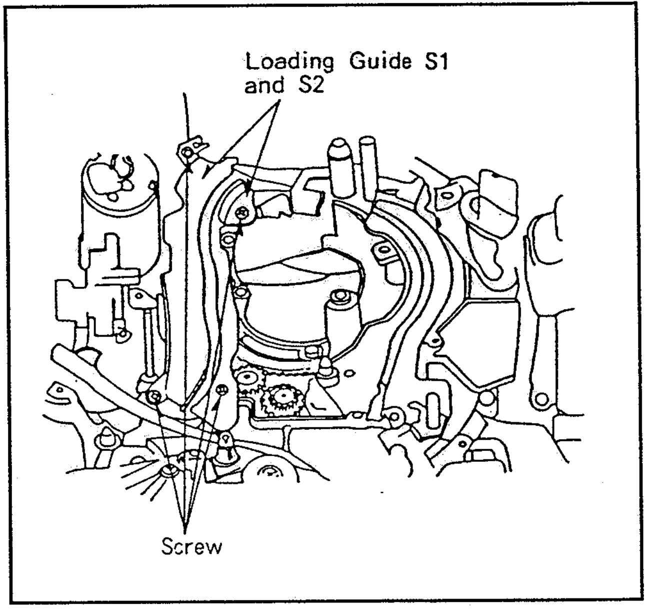

Loading Guide S1 and S2
Screw

Figure M34

2. Slide a Supply Loading Post Unit into the gap between the Loading Guide S1 and S2 hooking the connection Rod to the connection Tie Unit as shown below.

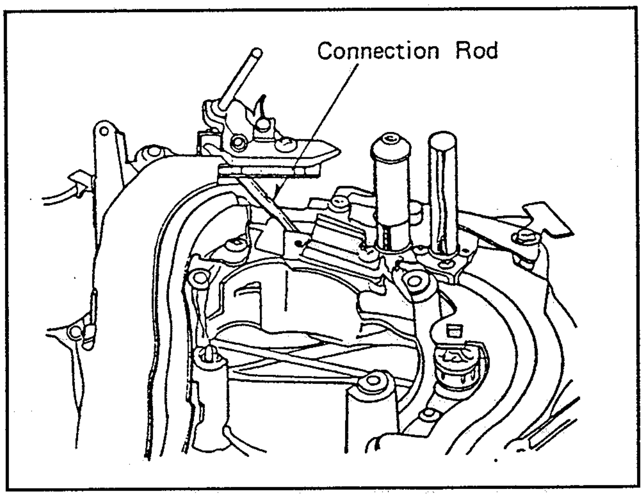

Connection Rod

Figure M35

3. Install a V stopper Base and Supply Post Stopper.

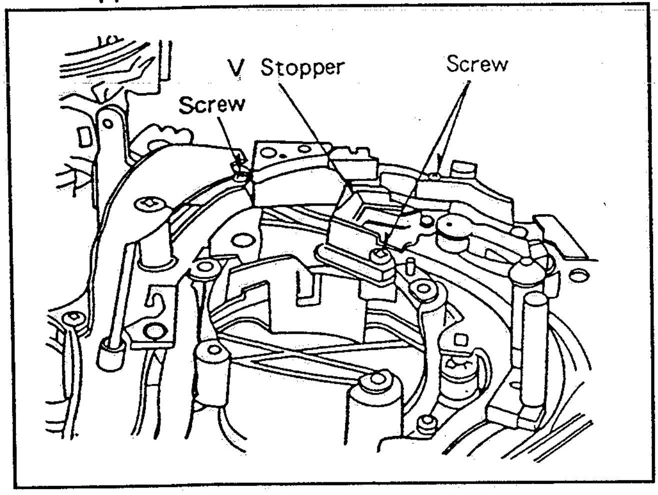

V Stopper
Screw
Screw

Figure M36

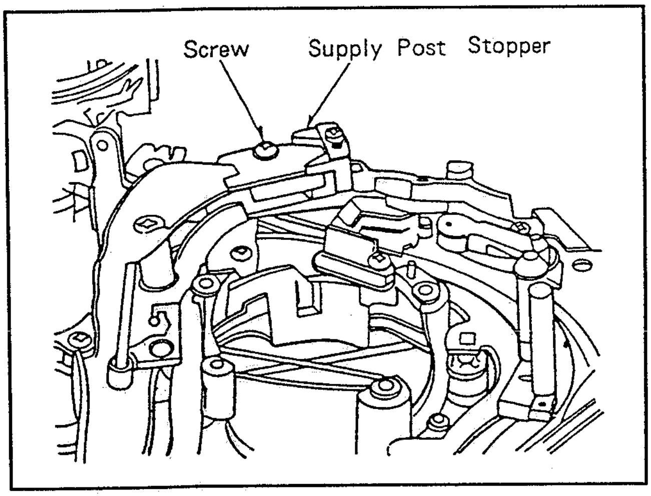

Screw
Supply Post Stopper

Figure M37

4. Set the Loading Post unit into Stop position as shown below.

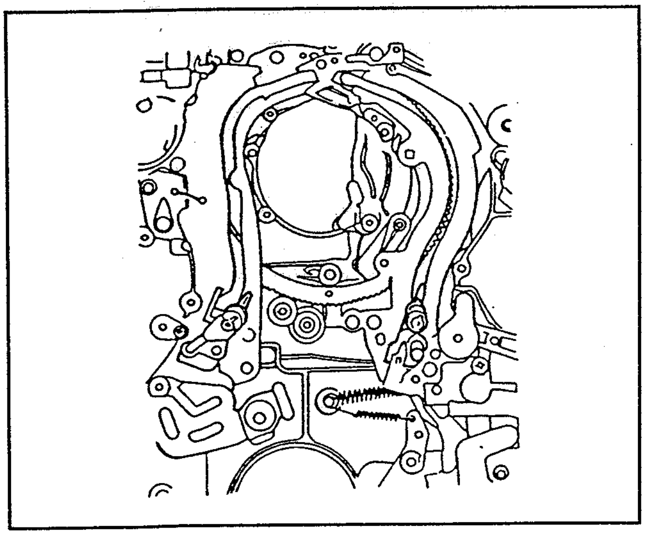


Figure M38

6-4-4. PROCEDURES FOR ASSEMBLING MAIN ROD

1. Place the Main Rod inserting 3 Thrust Washers and then insert 3 washers.
   After that, set them using 2 retaining rings as shown below.

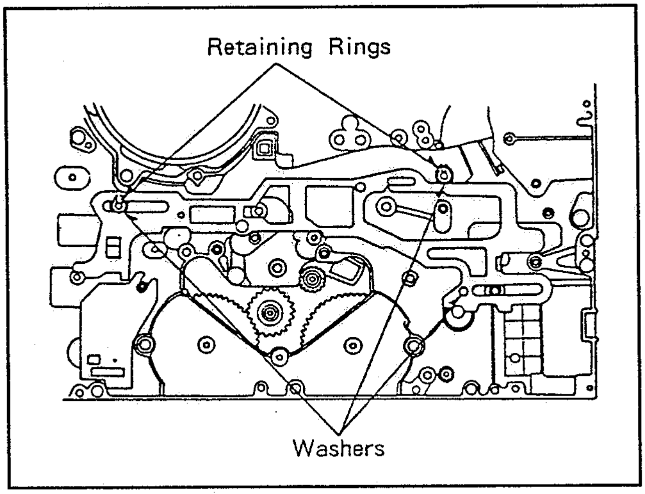

Retaining Rings
Washers

Figure M39

2. Install the Drive Arm kick Lever hooking the Drive Arm Kick Lever Spring and set it using a retainings.

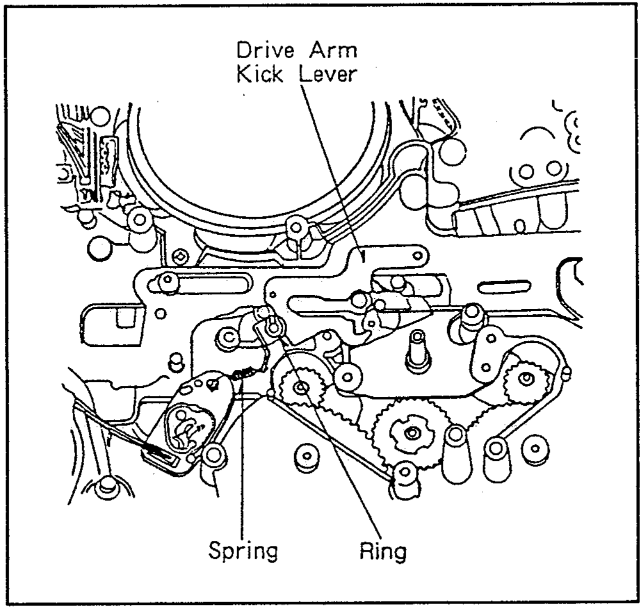

Drive Arm
Kick Lever
Spring
Ring

Figure M40

6-4-5. PROCEDURES FOR ASSEMBLING CAM GEAR AND LOADING GEAR (C)

1. Make sure that the hole on the Main Rod Lines up exactly with hole on chassis as shown below. Also, make sure the hole on the Cam Gear Lines up with the holes on the chassis.

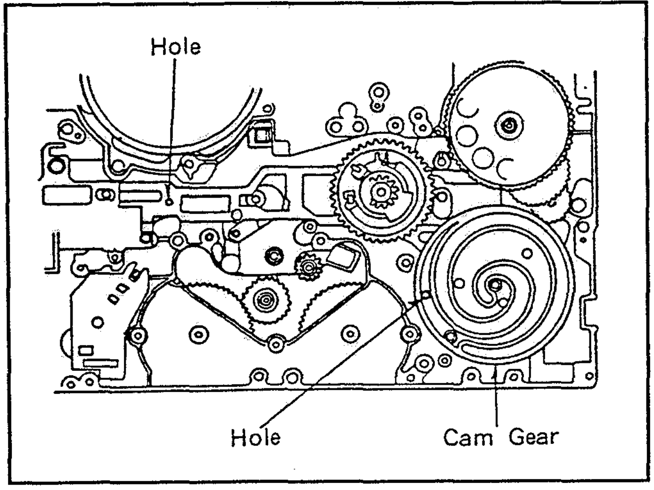

Hole
Hole
Cam Gear

Figure M41

2. Install the Loading Gear (C) keeping the relationship as shown below.

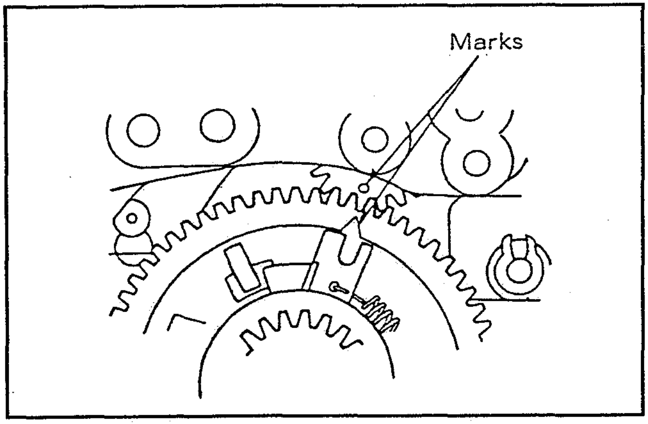


Figure M42

3. Install a Sector Gear as shown below.

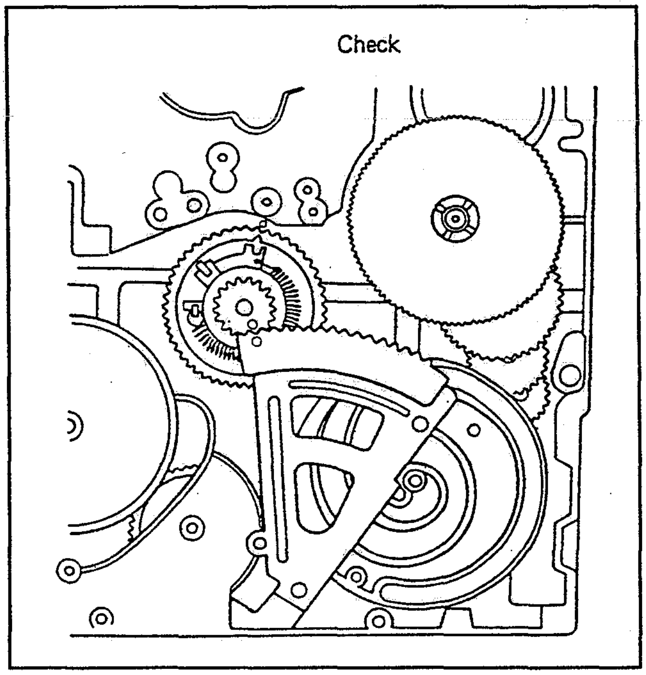


Figure M43

4. Set the SG Limiter.

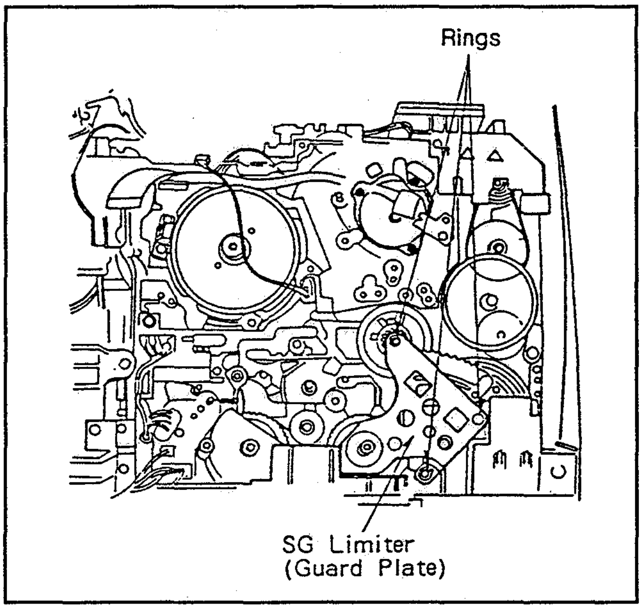

Rings
SG Limiter
(Guard Plate)

Figure M44

5. *Install the belt and the belt cover.*

6-4-6. ASSEMBLY PROCEDURES OF MODE SELECT SWITCH

1. Perform this procedure after confirming the complete setting of mechanical parts.
   First of all, confirm that the hole on a Main Rod is meeting with the hole on the chassis.
2. Position the moving contact of the mode select switch to the position as shown below.

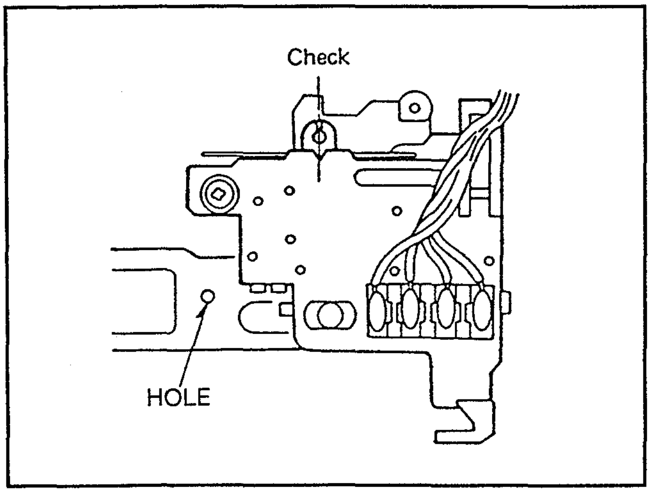


Figure M45

3. Install the Mode Select Switch Keeping these relationship written in item (1) and (2) by adjusting 2 screw.

Memo

SECTION 7

ELECTRICAL ADJUSTMENTS

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7-1. GENERAL

7-1-1. SERVICE & TEST EQUIPMENTS

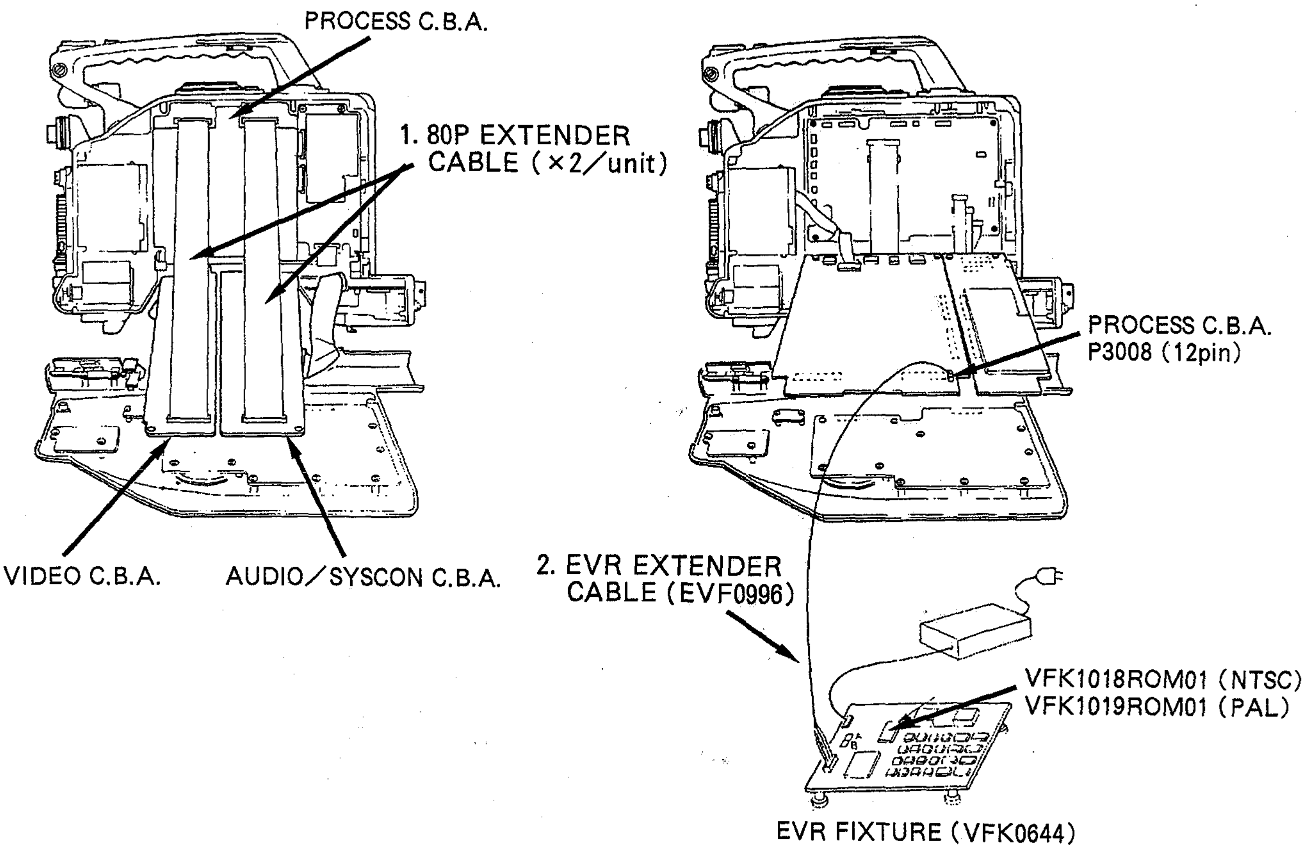
No.	EQUIPMENT	CAPACITY
1	D.V.M. (Digital Volt Meter)	0.01 to 50V
2	Dual-Trace Oscilloscope (with Probes)	0.005 to 50V / div, DC to 100MHz (50MHz)
3	Frequency Counter	0 to 10MHz
4	Sinewave Signal Generator (RC Oscillator)	0 to 10MHz
5	Video Sweep Generator	0 to 10MHz
6	Waveform Monitor	
7	Video Signal Generator (Composite, Y/C)	Video Signal with 7.5% set-up
8	Spectrum Analyzer	
9	Vector Scope	
10	SCH Meter	
11	Color Monitor TV	
12	VHS Alignment Tape (VFM8080HQFP)(NTSC) VHS Alignment Tape (VFM8180HADH)(PAL)	
13	Light Meter	
14	Lighting	2000lux on the chart surface 3200 degrees K.
15	Tripod	
16	Logarithmic Gray Scale Chart (YWV2310RB99)	
17	Hunting Chart (VFK0546)	
18	J Chart & Ball Chart (VFK0580)	
19	80P EXTENDER CABLE (VFK0993)	
20	EVR EXTENDER CABLE (VFK0996)	
21	EVR FIXTURE (VFK0644) ∗ROM IC : VFK1018ROM01 (NTSC) VFK1019ROM01 (PAL)	

7-1-2. INTRODUCTION OF NEW SERVICING FIXTURES

1) EXTENDER CABLE

Use the following extender cables when checking or adjusting the individual circuit board.

	PART No.	PART NAME	CONNECTION	Q'TY
1	VFK0993	80P EXTENDER CABLE	AUDIO/SYSCON C.B.A. ~ PROCESS C.B.A. VIDEO C.B.A. ~ PROCESS C.B.A.	2
2	VFK0996	EVR EXTENDER CABLE	PROCESS C.B.A. ~ EVR FIXTURE (VFK0644)	1


PROCESS C.B.A.
1. 80P EXTENDER CABLE (×2/unit)
VIDEO C.B.A.
AUDIO/SYSCON C.B.A.
PROCESS C.B.A. P3008 (12pin)
2. EVR EXTENDER CABLE (EVF0996)
VFK1018ROM01 (NTSC)
VFK1019ROM01 (PAL)
EVR FIXTURE (VFK0644)

2) E.V.R FIXTURE & ROM IC

Following shows EVR fixture and ROM IC.

PART No.	PART NAME	EFFECTIVE MODEL
VFK0644	E.V.R. FIXTURE	COMMON
VFK1018ROM01	ROM IC (NTSC)	AG-DP800P
VFK1019ROM01	ROM IC (PAL)	AG-DP800E

7-1-3. PREPARATION

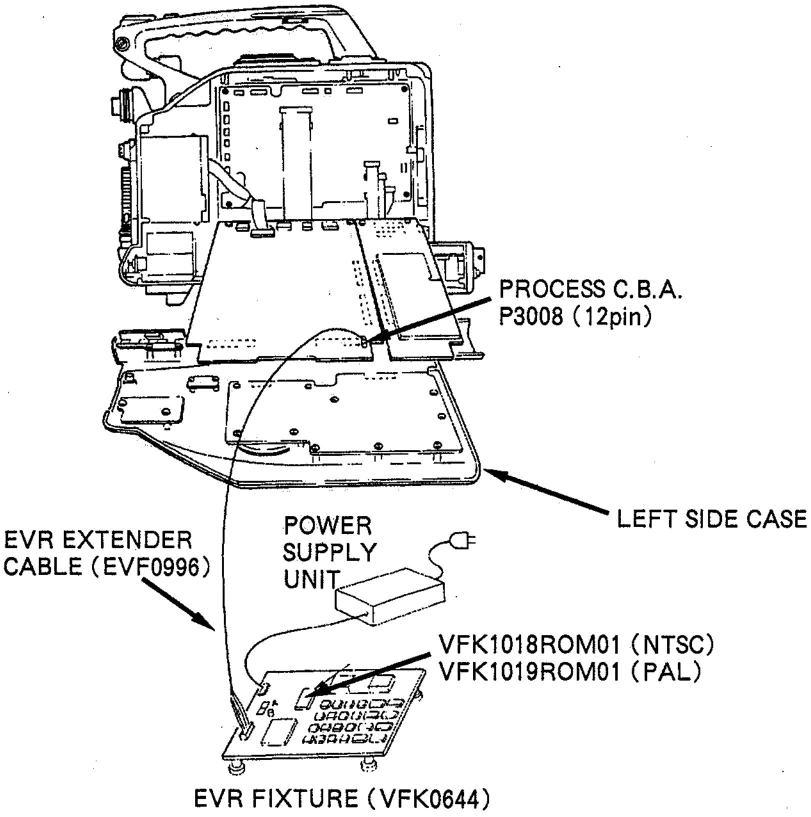
1) Remove the left side case and then open the process C.B.A. referring to the disassembly method of the service manual.

2) Connect the E.V.R. extender cable (VFK0996) between E.V.R. fixture (VFK0644) and process C.B.A. (at P3008) of the AG-DP800.

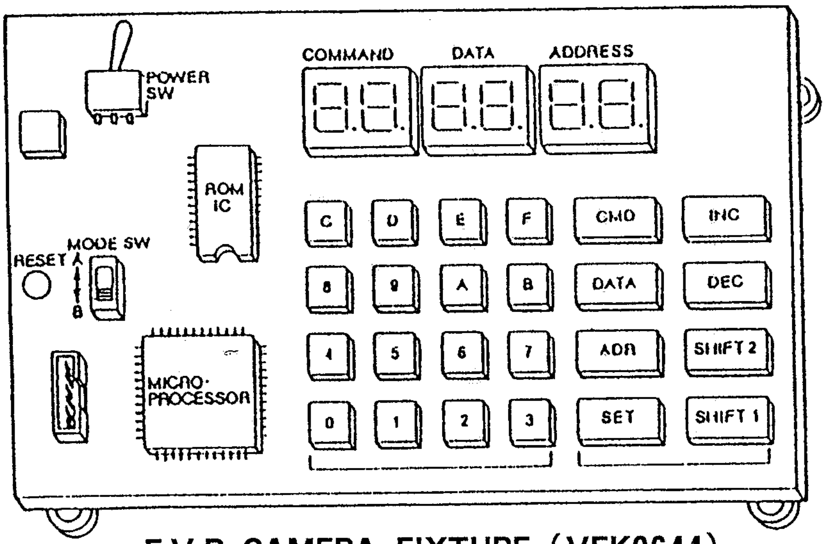
3) Supply a DC voltage (+12V) to the AG-DP800.

4) Supply a DC voltage (+6V) to the E.V.R. fixture (VFK0644).

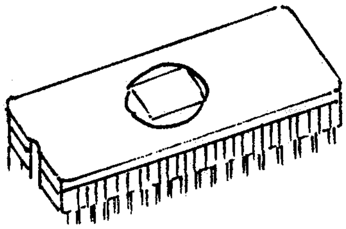
5) Turn on the power of the E.V.R. fixture and then turn on the power of the AG-DP800.


PROCESS C.B.A.
P3008 (12pin)
LEFT SIDE CASE
EVR EXTENDER
CABLE (EVF0996)
POWER
SUPPLY
UNIT
VFK1018ROM01 (NTSC)
VFK1019ROM01 (PAL)
EVR FIXTURE (VFK0644)

7-1-4. E.V.R. FIXTURE (VFK0644) & ROM IC


POWER SW
COMMAND
DATA
ADDRESS
ROM IC
MODE SW
RESET
A
B
MICRO-PROCESSOR
C
D
E
F
CMD
INC
8
9
A
B
DATA
DEC
4
5
6
7
ADR
SHIFT 2
0
1
2
3
SET
SHIFT 1

E.V.R CAMERA FIXTURE (VFK0644)



ROM IC (VFK1019ROM1)
FOR AG-DP800E (PAL)

ROM IC (VFK1018ROM1)
FOR AG-DP800P (NTSC)

[INTRODUCTION]

The AG-DP800 camera circuit uses a dedicated microprocessor to generate the control signals for the analogue pre processing (APP) and digital signal processing sections (DSP). Two-E-EPROMs (Electrically Erasable Programmable Read Only Memory) are used to store camera adjustments plus scene file and hour meter data. These devices reduce the number of potentionmeter (variable resistor) adjustments which results in a lighter and more reliable camera.

As explained the above, the camera circuit uses two E-EPROM which relaces the variable resistor in conventional camera.
In the conventional camera, each adjustments were carried out by variable resistors as shown in Figure J1. However in the camera of the AG-DP800, the desired adjustment values are memorized in the E-EPROMs as a 8 bits digital data. The E-EPROMs supplies the adjustment values to the camera circuitly (analogue pre-processing, digital signal processing sections) through the camera microprocessor and D/A converter.

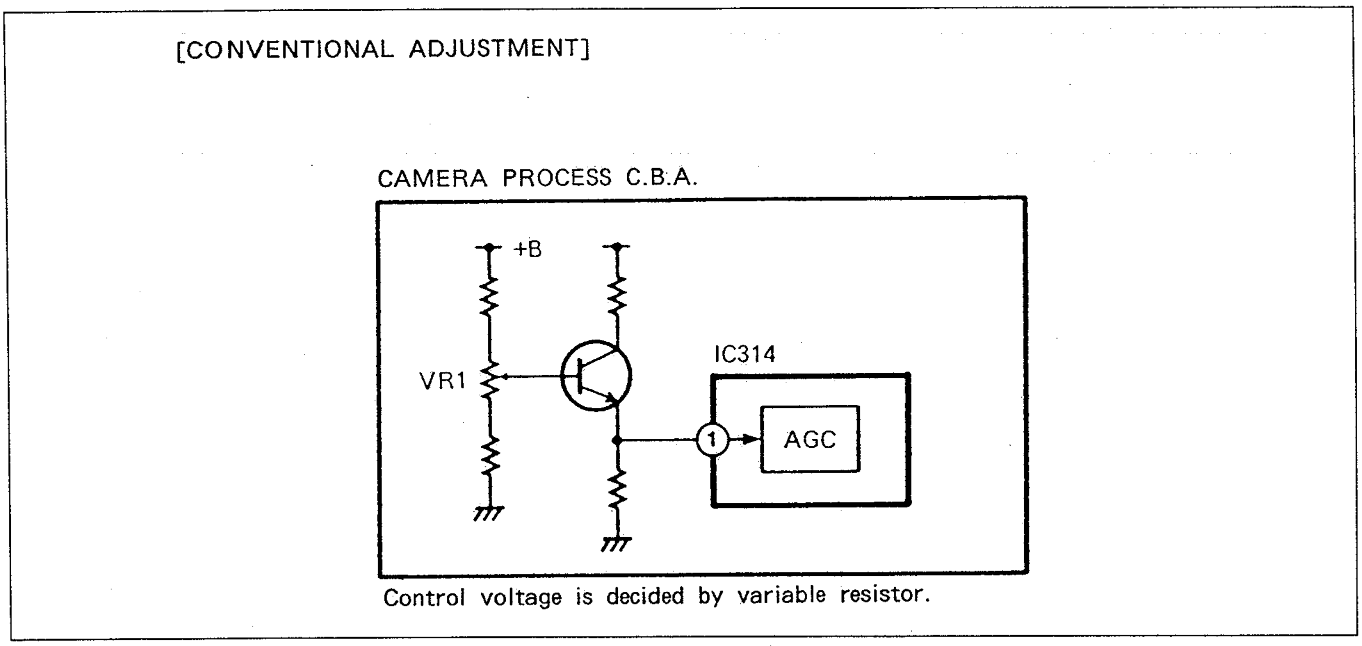

[CONVENTIONAL ADJUSTMENT]
CAMERA PROCESS C.B.A.
+B
VR1
IC314
1
AGC
Control voltage is decided by variable resistor.

Figure J1 Conventional Adjustment

The data of the camera E-EPROMs can be changed electrically.
The E.V.R. (Electric Variable Resistor) fixture (VFK0644) has been designed to change the data of E-EPROMs in the camera circuit. The E.V.R. fixture can communicate directly with the RAM of the camera microproessor to change the adjustment values (See figure J2).
Using the E.V.R. fixture (VFK0644), you can change the adjustment values stored in the camera E-EPROMs easily there by adjusting the camera circuit. The adjustment values of the camera can also be confirmed by the E.V.R. fixture.

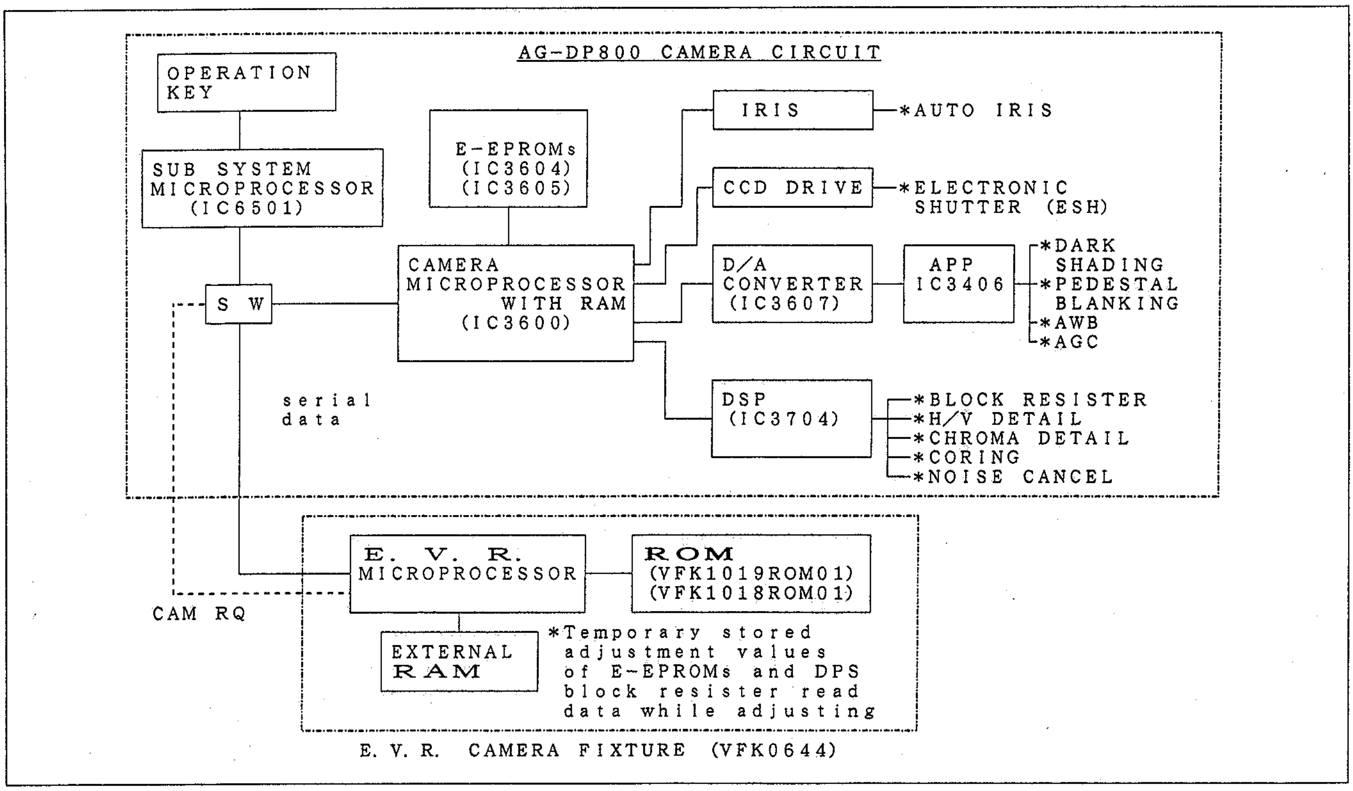
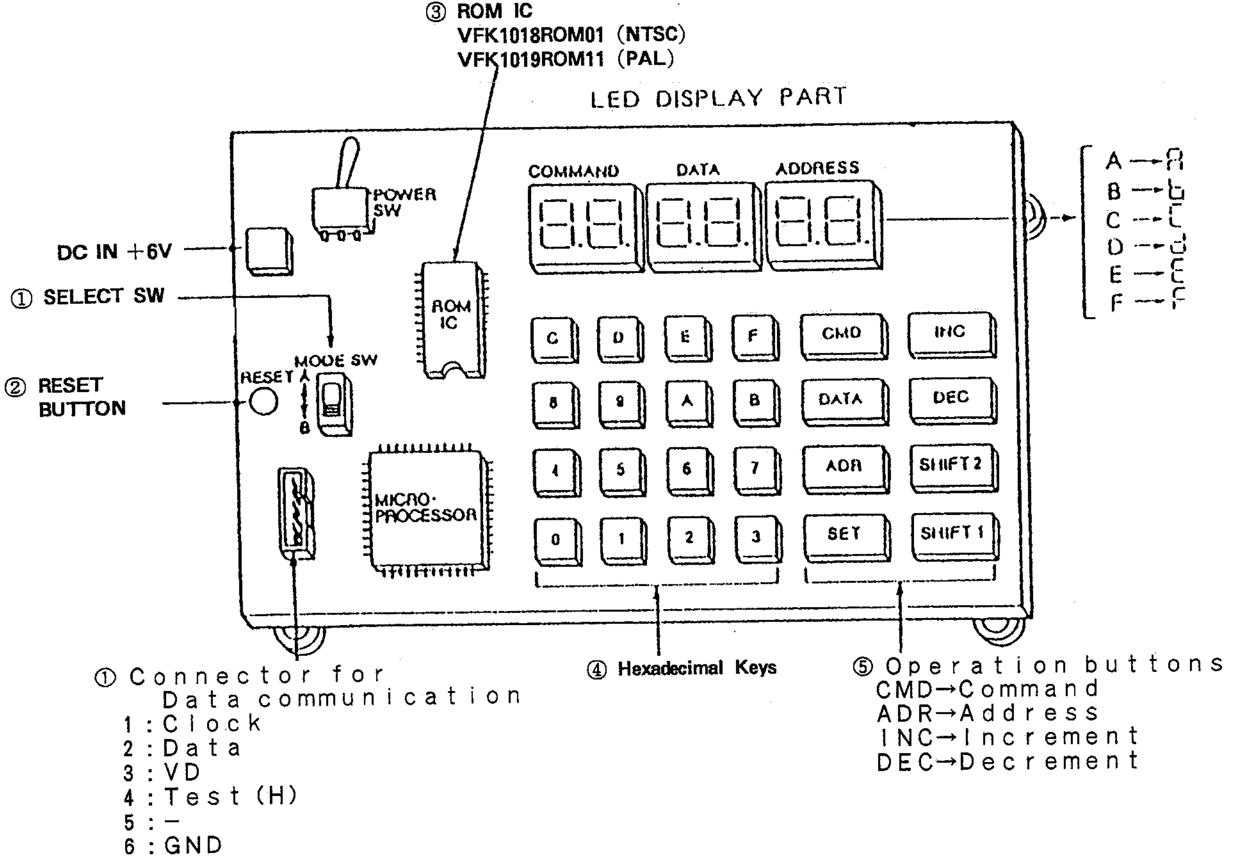

AG-DP800 CAMERA CIRCUIT
OPERATION KEY
SUB SYSTEM MICROPROCESSOR (IC6501)
E-EPROMs (IC3604) (IC3605)
IRIS
*AUTO IRIS
CCD DRIVE
*ELECTRONIC SHUTTER (ESH)
CAMERA MICROPROCESSOR WITH RAM (IC3600)
S W
D/A CONVERTER (IC3607)
APP IC3406
*DARK SHADING
*PEDESTAL BLANKING
*AWB
*AGC
serial data
DSP (IC3704)
*BLOCK RESISTER
*H/V DETAIL
*CHROMA DETAIL
*CORING
*NOISE CANCEL
E. V. R. MICROPROCESSOR
ROM (VFK1019ROM01) (VFK1018ROM01)
CAM RQ
EXTERNAL RAM
*Temporary stored adjustment values of E-EPROMs and DPS block resister read data while adjusting
E. V. R. CAMERA FIXTURE (VFK0644)

Figure J2 Data Communication Between E.V.R. and AG-DP800

[NAME OF PARTS AND THEIR FUNCTIONS]

Before operating the E.V.R. fixture, become familiar with the names of the parts of the E.V.R. fixture and their function.


③ ROM IC
VFK1018ROM01 (NTSC)
VFK1019ROM11 (PAL)
LED DISPLAY PART
COMMAND
DATA
ADDRESS
POWER SW
DC IN +6V
① SELECT SW
MODE SW
RESET
A
B
② RESET BUTTON
ROM IC
MICRO-PROCESSOR
C D E F CMD INC
8 9 A B DATA DEC
4 5 6 7 ADR SHIFT 2
0 1 2 3 SET SHIFT 1
A→A
B→b
C→c
D→d
E→E
F→F
① Connector for Data communication
1 : Clock
2 : Data
3 : VD
4 : Test (H)
5 : –
6 : GND
④ Hexadecimal Keys
⑤ Operation buttons
CMD→Command
ADR→Address
INC→Increment
DEC→Decrement

NO.	NAME	DESCRIPTION
①	MODE SW	Set this SW to "A" position for AG-DP800
②	RESET BUTTON	After Power is turned on, if operation is not stable,push this SW
③	ROM IC	ROM IC of which Programing (to operate E.V.R.) is memorized in.
④	HEXADECIMAL KEYS	Key buttons of 16 pieces (from"0"to"F") These are used when "COMMAND","DATA",or"ADDRESS" is set.
⑤	OPERATION BUTTONS	The buttons to operate writing,reading or setting the data.
⑤	CMD:Command button	This used to decide the which mode (command) between E.V.R. and camera (for example,data writing or reading) to perform.
	DATA:Data button	For changing Data.
	ADR:Address button	To appoint the EEPROM address or RAM address.
	SET:Set button	To perform the appointed command (for example,data writing or reading)
	INC :Incliment DEC:Decliment	Increase or decrease data one by one (+1.−1)
	SHIFT 1 button	To carry out macro operation (while pushing with hexadecimal keys)
	SHIFT 2 button	To carry out macro operation (while pushing with hexadecimal keys)

[MACRO OPERATION]

To carry out the MACRO operation, press the both "SHIFT 1" and one of ten key as shown below.

<table>
<tr><th>No.</th><th>Operation Key</th><th>Function</th></tr>
<tr><td>1</td><td>SHIFT 1 + 3</td><td>Sets Auto white Balance (AWB) ON .</td></tr>
<tr><td>2</td><td>SHIFT 1 + 4</td><td>Selects Auto white Balance (AWB) Memory.
∗Pressing the both "SHIFT 1" and "4" keys changes the AWB memory mode as follows.
<table>
<tr><th>Number of pressing</th><th>INDICATION</th><th>MODE</th></tr>
<tr><td>1ST</td><td>[00] [00] [00]</td><td>PRESET</td></tr>
<tr><td>2ND</td><td>[00] [01] [00]</td><td>Ach</td></tr>
<tr><td>3RD</td><td>[00] [02] [00]</td><td>Bch</td></tr>
</table></td></tr>
<tr><td>3</td><td>SHIFT 1 + 5</td><td>Sets Auto Black Balance (ABB) ON .</td></tr>
<tr><td>4</td><td>SHIFT 1 + 6</td><td>Changes VIDEO GAIN
∗Pressing the both "SHIFT 1" and "6" keys changes the video gain as follows.
<table>
<tr><th>Number of pressing</th><th>INDICATION</th><th>MODE</th><th>Number of pressing</th><th>INDICATION</th><th>MODE</th></tr>
<tr><td>1ST</td><td>[00] [00] [00]</td><td>0dB</td><td>4RD</td><td>[00] [03] [00]</td><td>24dB</td></tr>
<tr><td>2ND</td><td>[00] [01] [00]</td><td>9dB</td><td rowspan="2">5TH</td><td rowspan="2">[00] [07] [00]</td><td rowspan="2">Super High Gain</td></tr>
<tr><td>3RD</td><td>[00] [02] [00]</td><td>18dB</td></tr>
</table></td></tr>
<tr><td>5</td><td>SHIFT 1 + 7</td><td>Sets Auto Gain Control (CAMERA) ON/OFF
∗Pressing the SHIFT 1 + 7 repeatedly to change the AGC ON/OFF. The E.V.R. indicates the AGC in the display detail as follows.
<table>
<tr><th>Number of pressing</th><th>INDICATION</th><th>MODE</th></tr>
<tr><td>1ST</td><td>[00] [00] [00]</td><td>AGC OFF</td></tr>
<tr><td>2ND</td><td>[00] [01] [00]</td><td>AGC ON</td></tr>
</table></td></tr>
<tr><td>6</td><td>SHIFT 1 + 8</td><td>Selects Video Output Signal.
∗Pressing the both "SHIFT 1" and "8" keys selects the video output signal as follows.
<table>
<tr><th>Number of pressing</th><th>INDICATION</th><th>MODE</th></tr>
<tr><td>1ST</td><td>[00] [00] [00]</td><td>CAMERA</td></tr>
<tr><td>2ND</td><td>[00] [01] [00]</td><td>BAR</td></tr>
</table></td></tr>
</table>

[HOW TO USE THE E.V.R. FIXTURE]

Before you start

1) First install the ROM IC in the E.V.R. fixture and then supply the DC voltage (+6V) into the DC INPUT of the E.V.R. fixture.
2) Connect the E.V.R. extender cable (VFK0996) between E.V.R. fixture and AG-DP800 reffering previous preparation (Item 7-1-3).
3) Turn on the power of the E.V.R. fixture and confirm that LED display indicates the "d1 90" on the COMMAND and DATA displays. If the indication "d1 90" doesn't appear, push the MANUAL RESET button to be reset, located on the left side of the board.
4) Then turn on the power of the AG-DP800.
5) Select the MODE SELECT SW to "A" position, located near manual reset button.

Adjusting the adjustment value of the camera

In the AG-DP800, the Y Gain Adjustment (item 7-1-4-2) for instance, if follows the steps below.

<STEP 1>: First carry out the macro operation of the Y Gain adjustment

1) Press "CND" key and then "F" and "0" keys.
   (Note that the period "." will be lighted up at next CMD display when you press the CMD key).
2) Press "ADR" key and then "B" and "7" keys.
3) Press the both "SHIFT 2" and "F" keys to carry out the macro operation.

	Buttons to be pressed	LED Indication
1	CMD F 0	Lights up F0. 90 17
2	ADR B 7	Lights up F0 90 b7.
3	SHIFT2 + F	F0 90 b7

<STEP 2>: Adjust the Y gain for your desired adjustment value

1) Press "CMD" key and then "0" and "6" keys.
2) Press "ADR" key and then "1" and "A" keys
3) Adjust the Y gain using the "DEC" and "INC" keys.
   * The adjusted value will be stored in RAM of the E.V.R. fixture.

	Buttons to be pressed	LED Indication
1	CMD 0 6	Lights up 06. 90 b7
2	ADR 1 A	Lights up 06 90. 1A
3	INC DEC	06 08 1A

<STEP 3>: Store the adjustment value into E-EPROMs of the AG-DP800.

1) Press the both "SHIFT 2" and "F" keys to store the Y gain adjustment value into the E-EROMs from the RAM of the E.V.R. fixture.

	Buttons to be pressed	LED Indication
1	SHIFT2 + F	06 75 1A

7-2. CAMERA SECTION

7-2-1. PREPARATION

A. SETTING

1. Remove the right panel and open the process C.B.A.
   (refer to page 2-3 of service manual, volume 1)
2. Supply an external DC to the unit.
3. Connect a monitor TV to the camera video output (BNC).

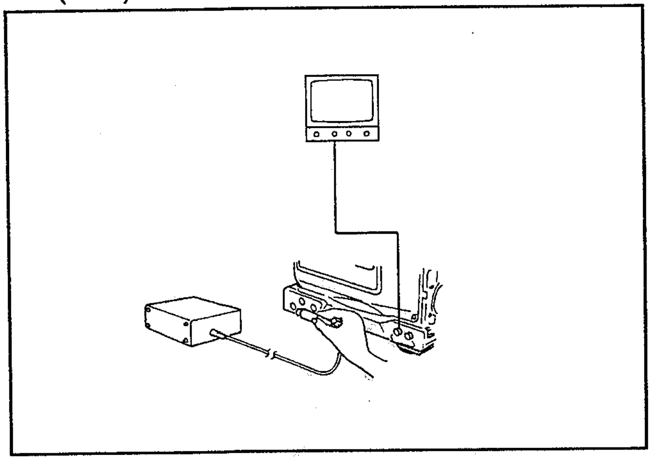


Figure C-1.

B. SETTING OF THE CONTROLS FOR THE CAMERA ADJUSTMENTS

Unless otherwise specified, set the controls as shown below.

- POWER SW : ON
- OUTPUT SELECTOR SW (CAM/BAR) : CAMERA
- GAIN SELECTOR SW : 0dB
- AWB MEMORY SW : PRE
- SHUTTER SW : OFF
- FILTER SELECTOR : 1
- SCENE FILE SELECTOR : NORMAL

C. SETTING UP FOR LIGHTING

In order to illuminate the surface of the chart in the following specifications, the following lighting system is one of the recommended system.

1. Distance between the camera and test chart should be more than 3m as shown in Figure C-2.
2. Lighting angles "A" and "B" should be equal as shown in Figure C-2.
3. Lighting should be the following conditions.
   Lamp : Halogen Lamps ×2
   Lux : 2000lux at A points
   Incident : 3200K degrees.
4. The room should be closed by a black curtain.

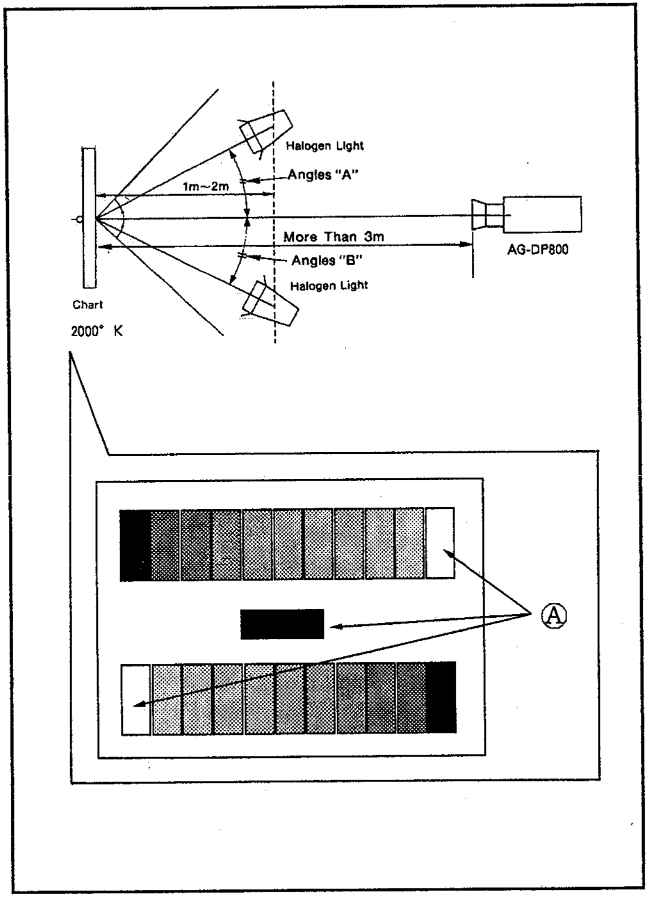


Figure C-2.

7-2-2. SAMPLING PULSE ADJ.

BOARD	CCD PULSE C.B.A.
TP	TP519 [A-3], TP523 [A-3] (CCD DRIVE)
ADJ.	VR5 [A-2], VR6 [A-3]
F.NBR	- - - - -
CHART	- - - - -
M.EQ	OSCILLOSCOPE
SPEC.	A = 60.0 ± 0.5ns, B = 79.0 ± 0.5ns

SW POSITION				
W/B BAL	**GAIN**	**AWB**	**OUT PUT**	**S HT**
OFF	0dB	PRE	CAM	OFF

1. Connect the scope CH1 to TP519 and CH2 to TP523.
2. Adjust VR5 so that the distance "A" is 60.0nsec ± 0.5nsec as shown in Figure C-3.
3. Adjust VR6 so that the distance "B" is 79.0nsec ± 0.5nsec as shown in Figure C-3.

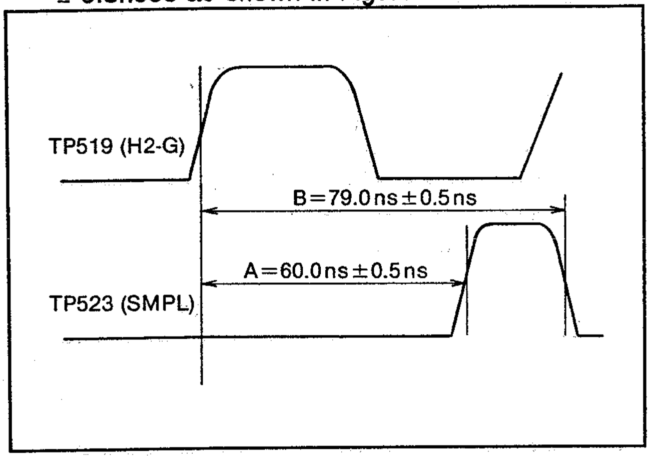


Figure C-3

7-2-3. CLAMP PULSE ADJ.

BOARD	CCD PULSE C.B.A.
TP	TP519 [A-3], TP522 [B-3] (CCD DRIVE)
ADJ.	VR3 [A-2], VR4 [A-2]
F.NBR	- - - - -
CHART	- - - - -
M.EQ	OSCILLOSCOPE
SPEC.	A = 28.5 ± 0.5ns, B = 48.5 ± 0.5ns

SW POSITION				
W/B BAL	**GAIN**	**AWB**	**OUT PUT**	**S HT**
OFF	0dB	PRE	CAM	OFF

1. Connect the scope CH2 to TP519 and CH2 to TP522.
2. Adjust VR3 so that the distance "A" is 28.5nsec ± 0.5nsec as shown in Figure C-4.
3. Adjust VR4 so that the distance "B" is 48.5nsec ± 0.5nsec as shown in Figure C-4.

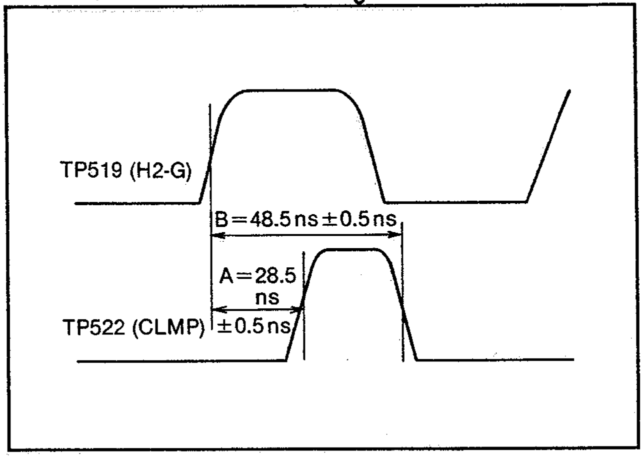


Figure C-4.

7-2-4. RESET PULSE ADJ.

BOARD	CCD PULSE C.B.A.
TP	TP519 [A-3], TP513 [A-3] (CCD DRIVE)
ADJ.	VR1 [A-1], VR2 [A-2]
F.NBR	- - - - -
CHART	- - - - -
M.EQ	OSCILLOSCOPE
SPEC.	A = 11.0 ± 0.5ns

SW POSITION				
W/B BAL	**GAIN**	**AWB**	**OUT PUT**	**S HT**
OFF	0dB	PRE	CAM	OFF

1. Connect the scope CH1 to TP519 and CH2 to TP513.
2. Adjust VR1 so that the timing "A" between the beginning of the raising edge at TP519 and the center of the raising edge at TP513 is matched.
3. Adjust VR2 so that the pulse width "B" is 11nsec ± 0.5ns as shown in Figure C-5.

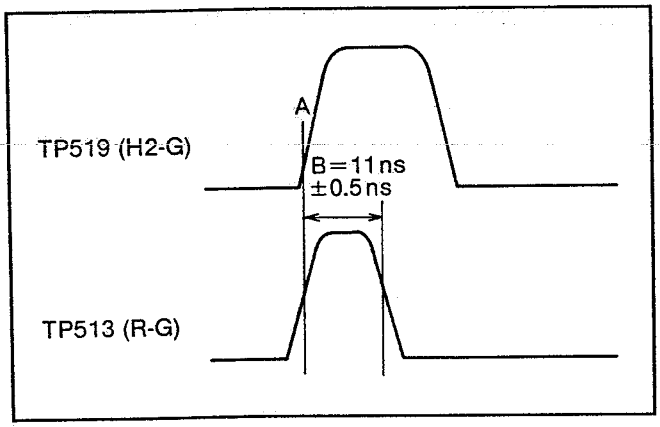


Figure C-5.

7-2-5. OG (1) ADJ.

BOARD	CCD DRIVE C.B.A.
TP	CAMERA OUT
ADJ.	VR507 [A-2] (R), VR509 [A-2] (B)
F.NBR	F8
CHART	GRAY SCALE
M.EQ	WFM
SPEC.	A = MINIMUM

SW POSITION				
W/B BAL	GAIN	AWB	OUT PUT	S HT
OFF	0dB	PRE	CAM	OFF

1. Set the WFM as follows.
   A) Response ... Band Pass (NTSC : 3.58MHz)
   (PAL : 4.43MHz)
   B) Volts Full Scale .... 0.2 (×5)
2. Connect the WFM to the camera video output connector.
3. Adjust VR507 so that the level "A" on the R-channel is minimum as shown in Figure C-6.
4. Adjust VR509 so that the level "A" on the B-channel is minimum as shown in Figure C-6.

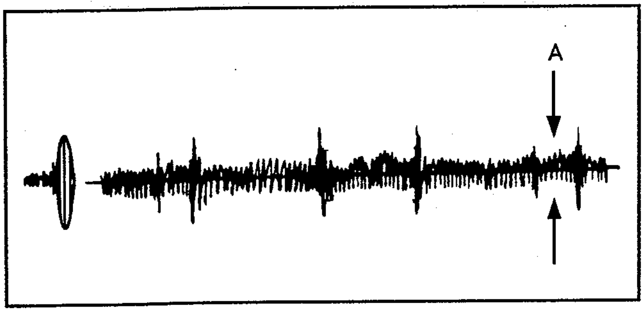


Figure C-6.

7-2-6. OG (2) ADJ.

BOARD	CCD DRIVE C.B.A.
TP	CAMERA OUT
ADJ.	VR507 [A-2] (R), VR509 [A-2] (B)
F.NBR	F8
CHART	GRAY SCALE
M.EQ	WFM
SPEC.	A = LESS THAN 28mVp-p (4IRE)

SW POSITION				
W/B BAL	GAIN	AWB	OUT PUT	S HT
AWB	0dB	A	CAMERA	OFF

1. Set the AWB (Auto White Balance) switch at the AWB position so that the camera performs the white balance.
2. Set the WFM the same step as the OG (1) adjustment.
3. Adjust VR509 (R channel) and VR509 (B channel) so that the level "A" is minimum the same steps as the OG (1) adjustment.
4. Confirm that the level "A" is less than 28mVp-p as shown in Figure C-6.
5. Perform AWB again.
6. Confirm that the level "A" is less than 28mVp-p as shown in Figure C-6.
   If it is not, repeat steps from 2 to 6.

7-2-7. DYNAMIC RANGE ADJ.

BOARD	CCD DRIVE C.B.A.
TP	TP3023 [E-1] (R), TP3024 [E-1] (G), TP3022 [E-1] (B) (PROCESS C.B.A.)
ADJ.	VR504 [A-1] (R), VR505 [A-1] (G), VR506 [A-2] (B)
F.NBR	F8 → F1.4
CHART	GRAY SCALE
M.EQ	OSCILLOSCOPE OR WFM
SPEC.	B : A = 3 : 1

SW POSITION				
W/B BAL	GAIN	AWB	OUT PUT	S HT
OFF	0dB	PRE	CAM	OFF

Note: When performing this adjustment, use a 1 : 1 scope probe.

(G channel)

1. Set the iris at the F8 position.
2. Connect the scope or WFM to TP3024.
3. Read the level "A".
4. Change the setting of the iris at the F1.4.
5. Adjust VR505 so that the DC level "B" is 3 times of level "A" (B : A = 3 : 1) as shown in Figure C-7.

(R channel)

1. Set the iris at the F8 position.
2. Connect the scope or WFM to TP3024.
3. Read the level "A".
4. Change the setting of the iris at the F1.4.
5. Adjust VR504 so that the R level is the same level as the G channel (refer to step 5 of the G channel).

(B channel)

1. Set the iris at the F8 position.
2. Connect the scope or WFM to TP3024.
3. Read the level "A".
4. Change the setting of the iris at the F1.4.
5. Adjust VR506 so that the B level is the same level as the G channel (refer to step 5 of the G channel).
   If it is not, adjust the B level as the best.

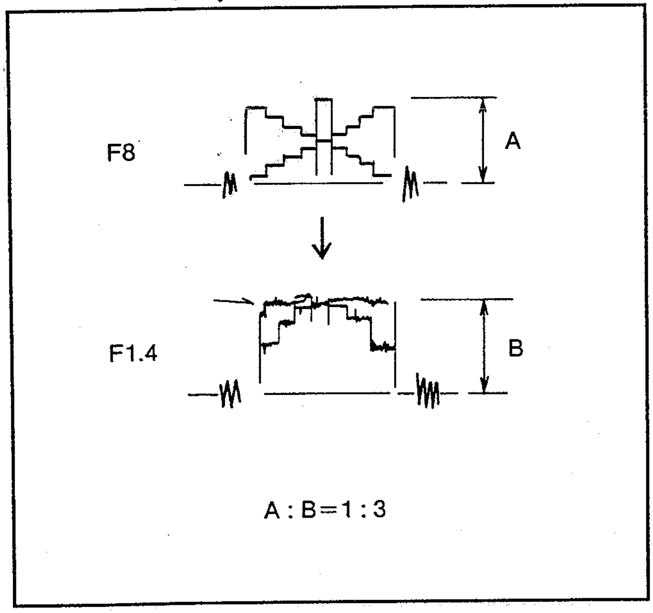


Figure C-7.

[PROCESS C.B.A.]

7-2-8. 4 FSC VCO ADJ.

BOARD	PROCESS C.B.A.
TP	TP3005 [E-5]
ADJ.	VC3001 [E-5]
F.NBR	- - - - -
CHART	- - - - -
M.EQ	OSCILLOSCOPE
SPEC.	DC = 0 ± 0.2V

SW POSITION			
W/B BAL	**GAIN**	**AWB**	**OUT PUT**
OFF	0dB	PRE	BAR

1. Connect the scope to TP3005.
2. Confirm that the DC level is 0V when the Gen Lock input signal is disconnected.
3. Connect the black burst or color bar signal to the Gen Lock input connector.
4. Adjust VC3001 so that the DC level is 0V ± 0.2V.

7-2-9. Y GAIN ADJ.

* Connect the EVR fixture to the unit.

BOARD	PROCESS C.B.A.
TP	TP3711 [A-3]
ADJ.	EVR
F.NBR	- - - - -
CHART	- - - - -
M.EQ	OSCILLOSCOPE
SPEC.	(NTSC) A : B = 576 : 300 ± 6 (PAL) A : B = 700 : 300 ± 6

SW POSITION			
W/B BAL	**GAIN**	**AWB**	**OUT PUT**
OFF	0dB	PRE	BAR

1. Connect the EVR fixture to the camera recorder.
2. Connect the scope to TP3711.
3. Press the [CMD], [F0], [ADR], [B7].
4. Press the [SHIFT2] + [F].
5. Press the [CMD], [06], [ADR], [1A].
6. Press the [INC] or [DEC] so that levels "A" and "B" are within the specification as shown in Figure C-8.
7. Press the [SHIFT2] + [F] so that the data of the Y gain is stored into the EE-PROM.

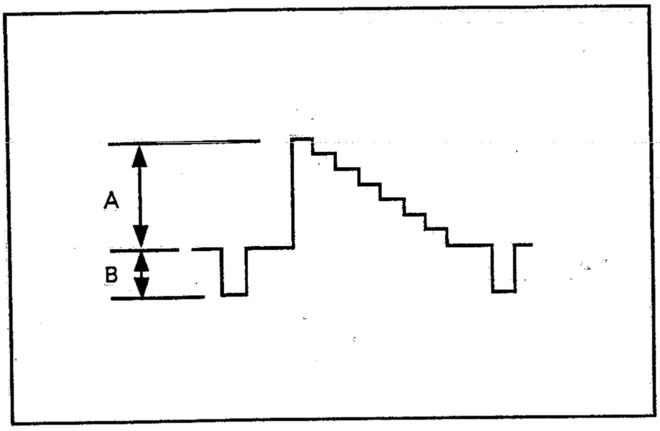


Figure C-8.

7-2-10. CAMERA OUT CARRIER BALANCE ADJ.

BOARD	PROCESS C.B.A.
TP	CAMERA OUT
ADJ.	VR3203 [B-3], VR3206 [A-3]
F.NBR	- - - - -
CHART	- - - - -
M.EQ	OSCILLOSCOPE OR WFM
SPEC.	A = MINIMUM

SW POSITION			
W/B BAL	GAIN	AWB	OUT PUT
OFF	0dB	PRE	BAR

1. Connect the scope or WFM to the camera output connector.
2. Adjust VR3203, VR3206 so that the level (A) is minimum as shown in Figure C-9.

Note: PAL Model
The level (B) and (C) should be equal as shown in Figure C-9.

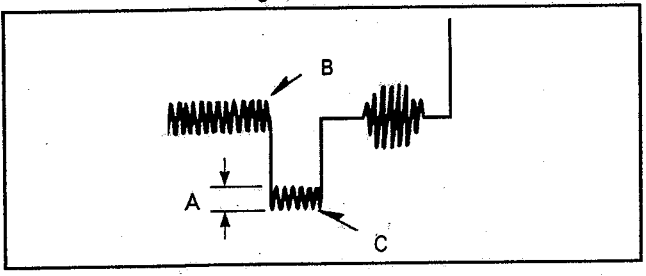


Figure C-9.

7-2-11. CAMERA OUT Y LEVEL ADJ.

BOARD	PROCESS C.B.A.
TP	CAMERA OUT
ADJ.	VR3207 [B-4]
F.NBR	- - - - -
CHART	- - - - -
M.EQ	OSCILLOSCOPE OR WFM
SPEC.	(NTSC) B = 286 ± 3mV (PAL) B = 300 ± 3mV

SW POSITION			
W/B BAL	GAIN	AWB	OUT PUT
OFF	0dB	PRE	BAR

1. Connect the scope or WFM to the camera video output connector.
2. Adjust VR3207 so that the sync level "B" is within the specification.
3. Confirm that the white level "A" is 549V ± 11mV (NTSC) / 700mV ± 14mV (PAL).
   If it is not, perform the Y gain adjustment again.

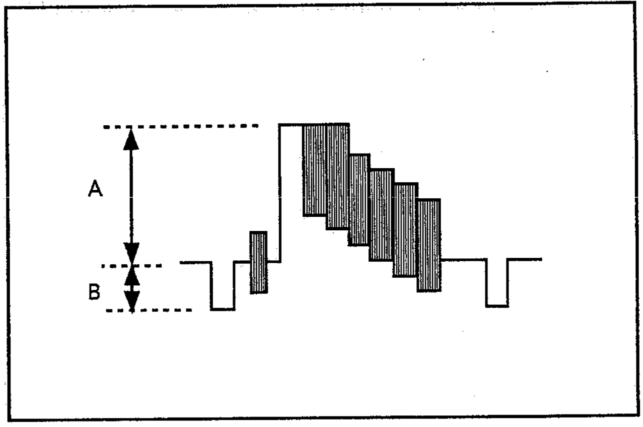


Figure C-10.

7-2-12. CAMERA OUT BURST LEVEL ADJ.

NTSC ONLY

BOARD	PROCESS C.B.A.
TP	CAMERA OUT
ADJ.	VR3205 [B-3]
F.NBR	- - - - -
CHART	- - - - -
M.EQ	VECTOR SCOPE
SPEC.	BURST LEVEL = 75%

SW POSITION			
W/B BAL	GAIN	AWB	OUT PUT
OFF	0dB	PRE	BAR

Note: Set the vectorscope to 75% position.

1. Connect the vectorscope to the camera video output connector.
2. Adjust VR3205 so that the burst level is 75% of the burst level indication on the WFM as shown in Figure C-11.

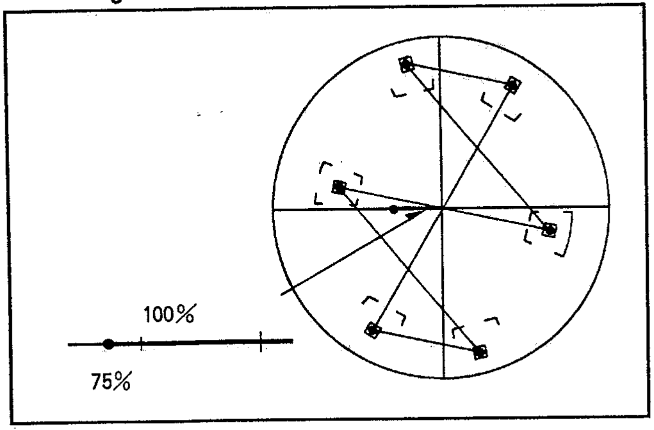


Figure C-11.

PAL ONLY

BOARD	PROCESS C.B.A.
TP	CAMERA OUT
ADJ.	VR3202[B-3], VR3205[B-3], VC3201[B-3]
F.NBR	- - - - -
CHART	- - - - -
M.EQ	VECTOR SCOPE
SPEC.	BURST LEVEL = 75%

SW POSITION			
W/B BAL	**GAIN**	**AWB**	**OUT PUT**
OFF	0dB	PRE	BAR

Note: Set the vectorscope to 75% position.

1. Connect the vectorscope to the camera video output connector.
2. Adjust VR3202, VR3205 so that burst level is 75% position.
3. Adjust VC3201 so that burst level is as shown Figure C-12.

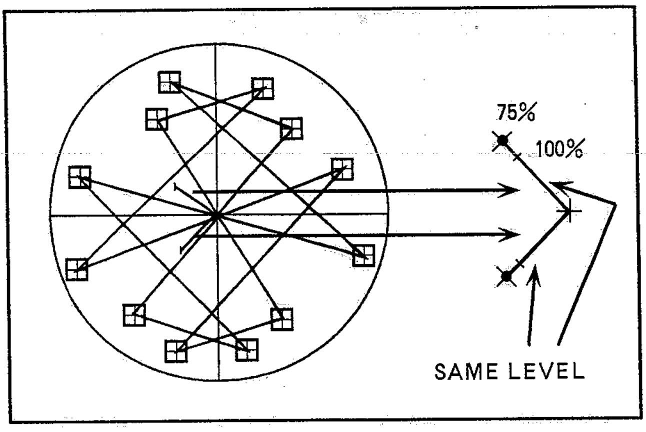


Figure C-12.

7-2-13. CAMERA OUT VECTOR ADJ.

BOARD	PROCESS C.B.A.
TP	CAMERA OUT
ADJ.	VR3201 [B-3], VR3204 [B-3], VC3201 [B-3]
F.NBR	- - - - -
CHART	- - - - -
M.EQ	VECTOR SCOPE
SPEC.	COLOR DOT IS INNER BOX

SW POSITION			
W/B BAL	**GAIN**	**AWB**	**OUT PUT**
OFF	0dB	PRE	BAR

Note: Set the vectorscope to the 75% mode.

1. Connect the vectorscope to the camera video output connector.
2. Adjust VR3201, VR3204 and VC3201 so that the position of all the vector dots are in the inner boxes of the scope as shown in Figure C-13.

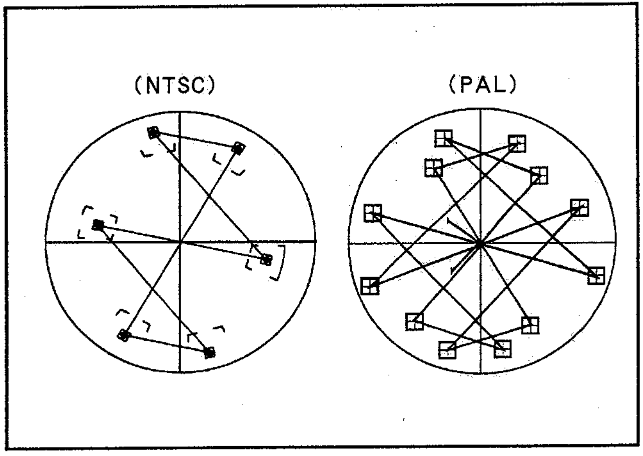


Figure C-13.

7-2-14. SYSTEM PHASE (1) ADJ.

BOARD	PROCESS C.B.A.
TP	CAMERA OUT
ADJ.	VR3005 [E-3]
F.NBR	- - - - -
CHART	- - - - -
M.EQ	OSCILLOSCOPE
SPEC.	AS SHOWN FIGURE

SW POSITION			
W/B BAL	GAIN	AWB	OUT PUT
OFF	0dB	PRE	BAR

1. Supply a black burst signal to the gen lock input connector.
2. Connect the scope CH1 to the camera output connector and CH2 to the gen lock signal.
3. Turn the H phase VR on the right side panel from the fully clockwise to the counterclockwise and make sure that the H phase range is more than 3usec.
4. Adjust the H phase VR so that the falling edge of the camera output H sync is the center of the renge.
5. Adjust VR3005 so that the falling edge of the black burst H sync is the same phase as the camera output sync as shown in Figure C-14.

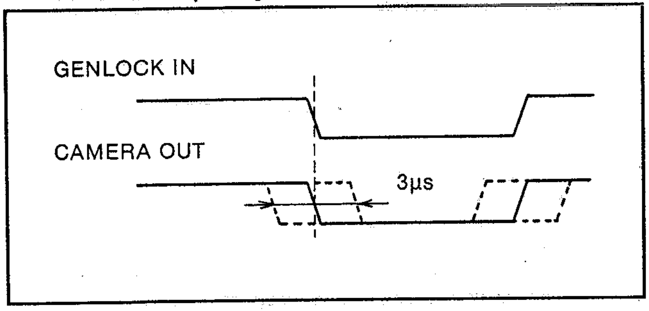


Figure C-14.

7-2-15. SYSTEM PHASE (2) ADJ.

*This adjustment performed only NTSC model.

BOARD	PROCESS C.B.A.
TP	CAMERA OUT
ADJ.	VR3005 [E-5]
F.NBR	- - - - -
CHART	- - - - -
M.EQ	SCH METER
SPEC.	AS SHOWN FIGURE

SW POSITION			
W/B BAL	GAIN	AWB	OUT PUT
OFF	0dB	PRE	BAR

1. Supply a black burst signal to the gen lock input connector.
2. Connect the SCH meter to the camera video output connector.
3. Adjust VR3005 so that the H phase of the camera output and gen lock signal are matched as shown in Figure C-15.

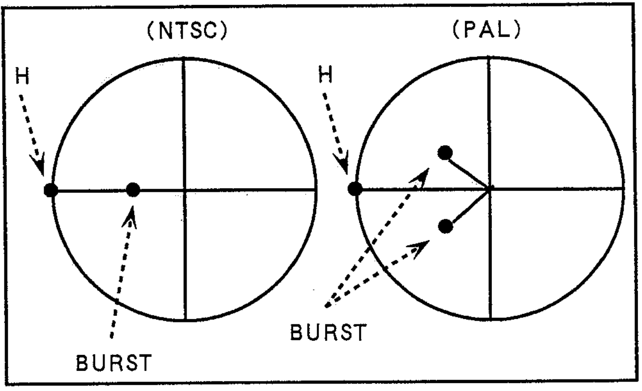


Figure C-15.

7-2-16. SCH PHASE ADJ.

BOARD	PROCESS C.B.A.
TP	CAMERA OUT
ADJ.	VR3004 [D-3]
F.NBR	- - - - -
CHART	- - - - -
M.EQ	SCH METER
SPEC.	SCH = 0 ± 2°

SW POSITION			
W/B BAL	GAIN	AWB	OUT PUT
OFF	0dB	PRE	BAR

1. Disconnect the Gen Lock signal and set the SCH meter to the "INT" mode.
2. Adjust the SC PHASE CORASE SW on the right side panel and VR3004 so that the SCH becomes as shown Figure C-16.

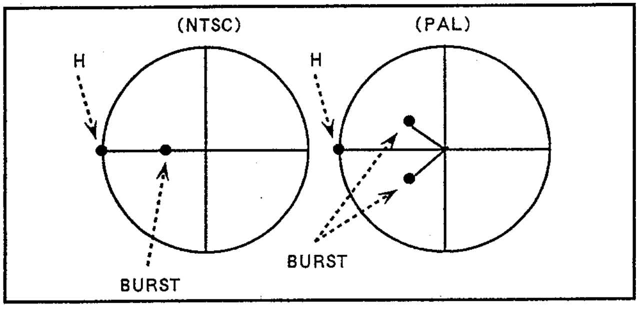


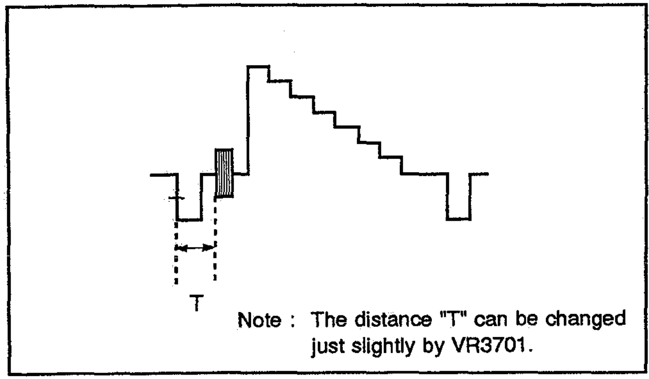
Figure C-16.

7-2-17. BF POSITION ADJ.

BOARD	PROCESS C.B.A.
TP	CAMERA OUT
ADJ.	VR3701 [D-3]
F.NBR	- - - - -
CHART	- - - - -
M.EQ	WFM
SPEC.	T = 5.3 ± 0.1μs (NTSC) T = 5.6 ± 0.1μs (PAL)

SW POSITION			
W/B BAL	GAIN	AWB	OUT PUT
OFF	0dB	PRE	BAR

1. Connect the WFM to the camera output connector.
2. Adjust VR3701 so that distance "T" is 5.6μs ± 0.1μs as shown in Figure C-17.



Note : The distance "T" can be changed just slightly by VR3701.

Figure C-17.

7-2-18. APP G INPUT LEVEL ADJ.

BOARD	PROCESS C.B.A.
TP	TP3409 [D-1]
ADJ.	VR3428 [D-1] (G LEV.)
F.NBR	F8 -1/4
CHART	GRAY SCALE
M.EQ	OSCILLOSCOPE
SPEC.	A = 300 ± 5mVp-p

SW POSITION			
W/B BAL	GAIN	AWB	OUT PUT
OFF	0dB	PRE	CAM

1. Connect the scope CH1 to TP3409 and TP3422 to trigger the scope.
2. Adjust VR3428 so that level "A" is 300mVp-p ± 5mV.

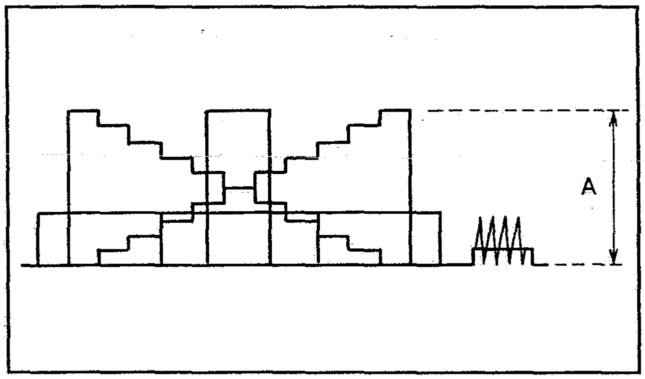


Figure C-18.

7-2-19. APP R.B INPUT LEVEL ADJ.

BOARD	PROCESS C.B.A.
TP	CAMERA OUT
ADJ.	VR3426 [D-1], VR3427 [D-1]
F.NBR	- - - - -
CHART	J CHART OR GRAY SCALE
M.EQ	VECTOR SCOPE
SPEC.	AS SHOWN FIGURE

SW POSITION			
W/B BAL	GAIN	AWB	OUT PUT
ABB	0dB	PRE	CAM

1. Connect the EVR fixture to the camera recorder.
2. Set the iris ring at the F8 position.
3. Press the [CMD], [F0], [ADR] and [F2].
4. Press the [SHIFT2] + [F] to performe the ABB (Auto Black Balance] and confirm that the display of the EVR shows [00][00][00].
5. Turn the iris ring so that the level at the camera video output is 70 ~ 80IRE.
6. Adjust V3426 and VR3427 so that the subcarrier noise is centered on the vectorscope.

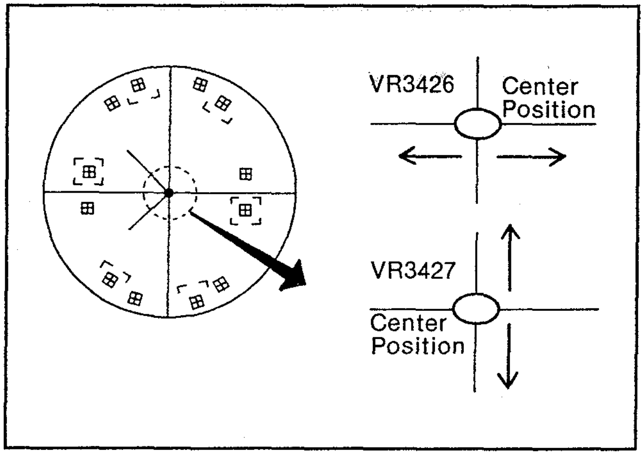


Figure C-19.

7-2-20. 9dB AGC R.B LEVEL ADJ.

* Connect the EVR fixture.

BOARD	PROCESS C.B.A.
TP	CAMERA OUT
ADJ.	EVR
F.NBR	- - - - -
CHART	J CHART OR GRAY SCALE
M.EQ	WFM
SPEC.	AS SHOWN FIGURE

SW POSITION			
W/B BAL	**GAIN**	**AWB**	**OUT PUT**
OFF	9dB	PRE	CAM

1. Set the gain mode in the 9dB mode by using the menu function.
2. Press the [CMD], [F0], [ADR] and [F3] keys.
3. Press the [SHIFT2] + [F] keys to perform 9dB gain up.
4. Adjust the level of the R channel.
    1) Press the [CMD], [06], [ADR] and [21] keys.
    2) Press the [INC] or [DEC] key so that the subcarrier noise is centered on the vectorscope as shown in Figure C-20 (NTSC) / Figure C-21 (PAL).
    3) Press the [CMD], [F2], [ADR] and [21] keys, and then press the [SHIFT2] + [F] keys for store the data of the R level into the ROM.
5. Adjust the level of the B channel.
    1) Press the [CMD], [06], [ADR] and [22] keys.
    2) Press the [INC] or [DEC] key so that the subcarrier noise is centered on the vectorscope as shown in Figure C-20 (NTSC) / Figure C-21 (PAL).
    3) Press the [CMD], [F2], [ADR], [22] keys, and then press the [SHIFT2] + [F] keys for store the data of the B level into the ROM.
6. Confirm that the subcarrier noise is centered on the vectorscope as shown in Figure C-20 (NTSC) / Figure C-21 (PAL).
    If it is not repeat step 2 to step 7.

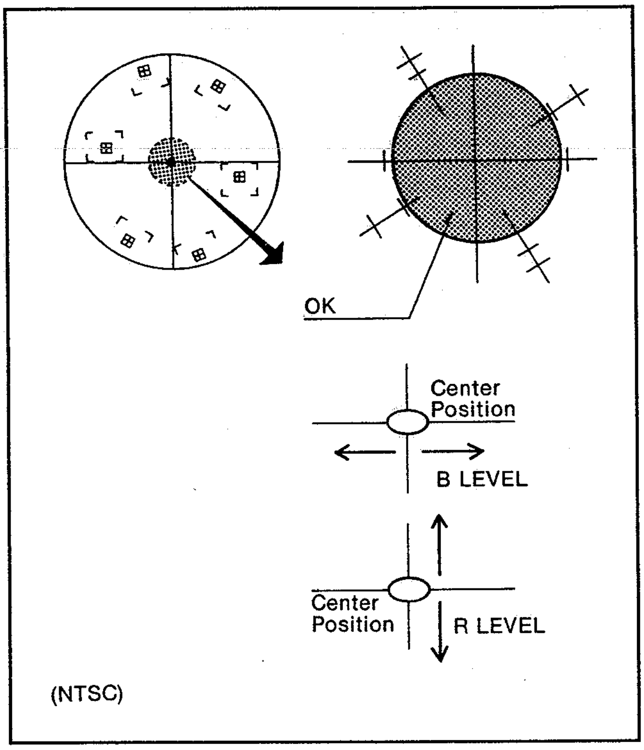


Figure C-20.

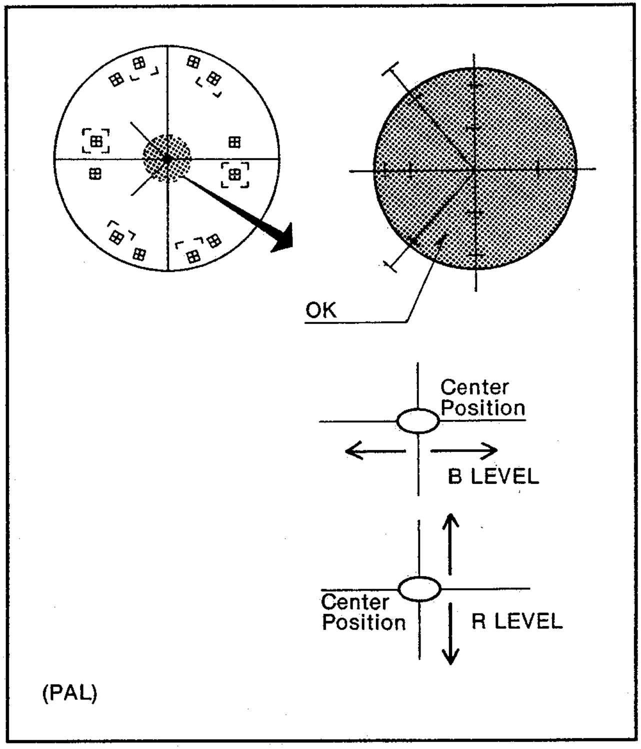


Figure C-21.

7-2-21. 18dB AGC R.B LEVEL ADJ.

BOARD	PROCESS C.B.A.
TP	CAMERA OUT
ADJ.	EVR
F.NBR	- - - - -
CHART	J CHART OR GRAY SCALE
M.EQ	WFM
SPEC.	AS SHOWN FIGURE

SW POSITION			
W/B BAL	GAIN	AWB	OUT PUT
OFF	18dB	PRE	CAM

1. Set the gain mode in the 18dB mode by using the menu function.
2. Press the [CMD], [F0], [ADR] and [F4] keys.
3. Press the [SHIFT2] + [F] keys perform the 18dB gain up.
4. Adjust the level of the R channel.
   1) Press the [CMD], [06], [ADR] and [21] keys.
   2) Press the [INC] or [DEC] key so that the subcarrier noise is centered on the vectorscope as shown in Figure C-22 (NTSC) / Figure C-23 (PAL).
   3) Press the [CMD], [F3], [ADR] and [21] keys, and then press the [SHIFT2] + [F] keys to store the data of the R level into the ROM.
5. Adjust the level of the B channel.
   1) Press the [CMD], [06], [ADR] and [22] keys.
   2) Press the [INC] or [DEC] key so that the subcarrier noise is centered on the vectorscope as shown in Figure C-22 (NTSC) / Figure C-23 (PAL).
   3) Press the [CMD], [F3], [ADR], [22] keys, and then press the [SHIFT2] + [F] keys to store the data of the B level into the ROM.
6. Confirm that the subcarrier noise is centered on the vectorscope as shown in Figure C-22 (NTSC) / Figure C-23 (PAL).

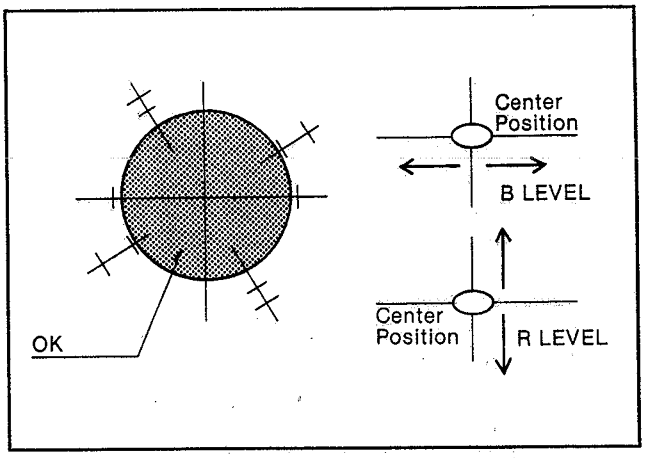


Figure C-22.

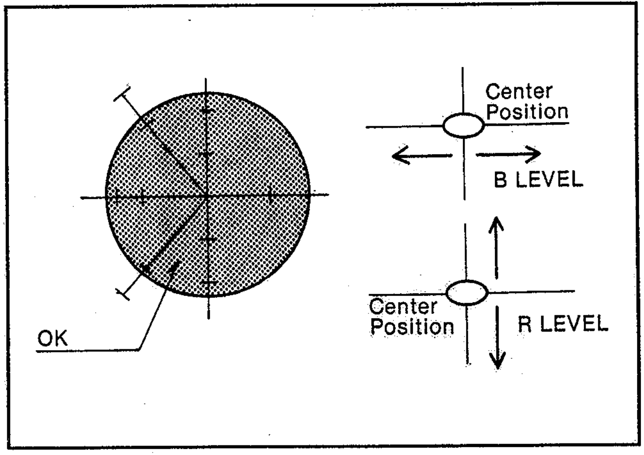


Figure C-23.

7-2-22. 24dB AGC R & B LEVEL ADJ.

BOARD	PROCESS C.B.A.
TP	CAMERA OUT
ADJ.	EVR
F.NBR	- - - - -
CHART	J CHART OR GRAY SCALE
M.EQ	WFM
SPEC.	AS SHOWN FIGURE

SW POSITION			
W/B BAL	GAIN	AWB	OUT PUT
OFF	24dB	PRE	CAM

1. Set the gain level in the 24dB mode by using the menu function.
2. Press the [CMD], [F0], [ADR] and [F5].
3. Press the [SHIFT2] + [F] to perform the 24dB gain up operation.

4. Adjust the AGC R level.
    1) Press the [CMD], [06] , [ADR] and [21].
    2) Press the [INC] or [DEC] so that the subcarrier noise is centered on the vectorscope as shown in Figure C-24 (NTSC) / Figure C-25 (PAL).
    3) Press the [CMD], [F4], [ADR] and [21], and then [SHIFT2] + [F] for store the R level data in to the ROM.
5. Adjust the AGC B level.
    1) Press the [CMD], [06], [ADR] and [22].
    2) Press the [INC] or [DEC] so that the subcarrier noise is centered on the vectorscope as shown in Figure C-24 (NTSC) / Figure C-25 (PAL).
    3) Press the [CMD], [F4], [ADR] and [22], and then [SHIFT2] + [F] for store the B level data to the ROM.
6. Confirm that the subcarrier noise is centered on the vectorscope as shown in Figuer C-24 (NTSC) / Figure C-25 (PAL).

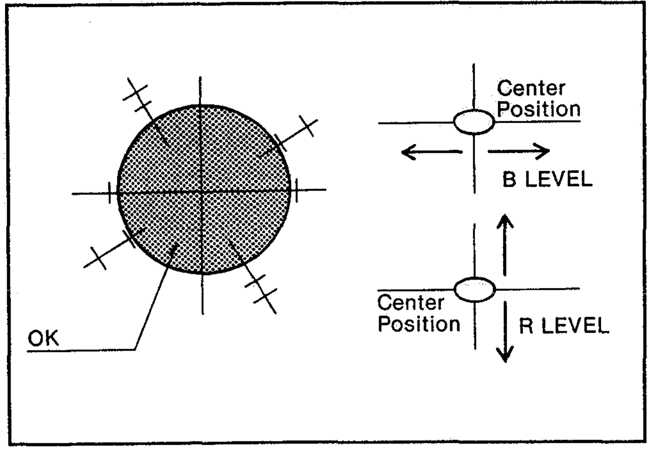


Figure C-24.

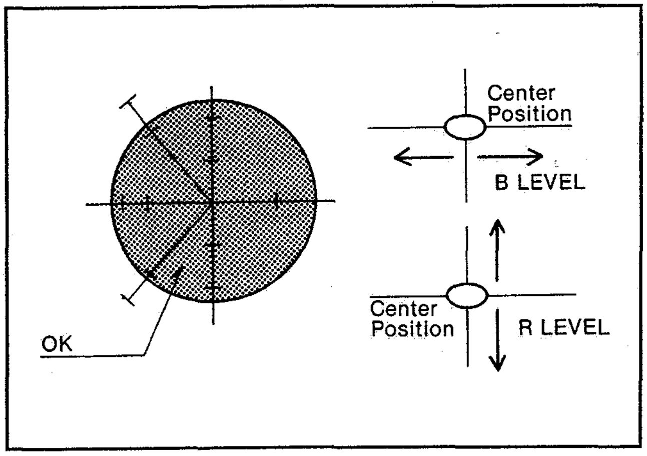


Figure C-25.

7-2-23. H DARK SHADING LEVEL ADJ.

BOARD	PROCESS C.B.A.
TP	TP3701 [C-2] (R), TP3702 [C-2] (G), TP3703 [C-2] (B), TP3422 [D-3]
ADJ.	VR3402 [D-2], VR3403 [D-2], VR3404 [D-2], VR3408 [D-2], VR3409 [D-2], VR3410 [D-2]
F.NBR	CLOSE
CHART	- - - - -
M.EQ	OSCILLOSCOPE
SPEC.	A = 0 ± 5mVp-p

SW POSITION			
W/B BAL	**GAIN**	**AWB**	**OUT PUT**
OFF	24dB	PRE	CAM

1. Set the gain mode in the 24dB mode by using the menu function.
2. Perform the ABB (Auto Black Balance) function.
3. Connect the scope to TP3422 to trigger the scope.
4. Adjust the H dark shading level of the R channel.
    1) Connect the scope to TP3701.
    2) Adjust VR3403 and VR3409 so that the R signal is flat as shown in Figure C-26.
5. Adjust the H dark shading level of the G channel.
    1) Connect the scope to TP3702.
    2) Adjust VR3404 and VR3410 so that the G signal is flat as shown in Figure C-26.
6. Adjust the H dark shading level of the B channel.
    1) Connect the scope to TP3703.
    2) Adjust VR3702 and VR3708 so that the B signal is flat as shown in Figure C-26.

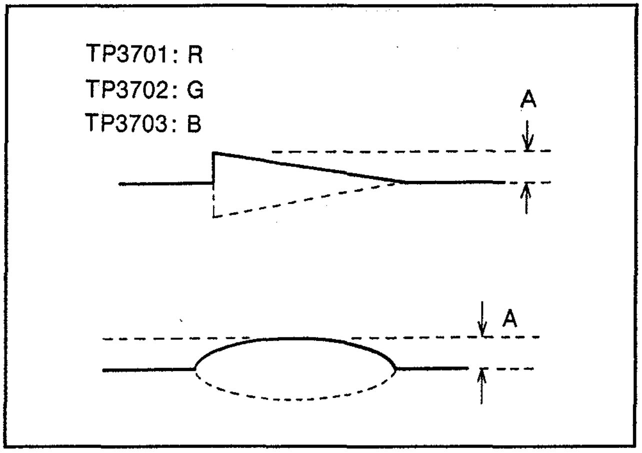


Figure C-26.

7-2-24. ABB OFF SET ADJ.

BOARD	PROCESS C.B.A.
TP	CAMERA OUT
ADJ.	EVR
F.NBR	CLOSE
CHART	- - - - -
M.EQ	VECTORSCOPE
SPEC.	AS SHOWN FIGURE

SW POSITION			
W/B BAL	GAIN	AWB	OUT PUT
ABB	0dB	PRE	CAM

FOR NTSC

1. Connect the EVR fixture.
2. Turn the iris to close position.
3. Press the [CMD], [F0], [ADR] and [B6] keys.
4. Press the [SHIFT2] + [F] so that the ABB (Auto Black Balance) is performed and the display on the EVR fixture shows [06][7F][17].
5. Adjust the ABB off set level for the R channel.
    1) Press the [CMD], [06], [ADR] and [17] keys.
    2) Press the [INC] or [DEC] so that the R subcarrier noise is centered on the vectorscope as shown in Figure C-27.
6. Adjust the ABB off set level for the B channel.
    1) Press the [CMD], [06], [ADR] and [18] keys.
    2) Press the [INC] or [DEC] so that the B subcarrier noise is centered on the vectorscope as shown in Figure C-27.
7. Press the [CMD], [F5], [ADR] and [B6], and then press the [SHIFT2] + [F].
   After performing this procedure, confirm that the display of the EVR fixture does not show error message (Err F).
8. Turn OFF and ON the power switch of the camera recorder and close the iris, repeat steps.
9. Repeat the steps from 1 to 3 and confirm that the subcarrier noise is centered on the vectorscope as shown in Figure C-27.
   If it is not, repeat the steps from 4 to 9.

FOR PAL

1. Connect the EVR fixture.
2. Turn the iris to close position.
3. Press the [CMD], [F0], [ADR] and [F7] keys.
4. Press the [SHIFT2] + [F] so that the ABB (Auto Black Balance) is performed and the display on the EVR fixture shows [06][7F][17].
5. Adjust the ABB off set level for the R channel.
    1) Press the [CMD], [06], [ADR] and [17] keys.
    2) press the [INC] or [DEC] so that the R subcarrier noise is centered on the vectorscope as shown in Figure C-27.
6. Adjust the ABB off set level for the B channel.
    1) Press the [CMD], [06], [ADR] and [18] keys.
    2) Press the [INC] or [DEC] so that the B subcarrier noise is centered on the vectorscope as shown in Figure C-27.
7. Press the [CMD], [F5], [ADR] and [F7], and then press the [SHIFT2] + [F].
   After performing this procedure, confirm that the display of the EVR fixture does not show error message (Err F).
8. Turn OFF and ON the power switch of the camera recorder.
9. Repeat the steps from 1 to 3 and confirm that the subcarrier noise is centered on the vectorscope as shown in Figure C-27.
   If it is not, repeat the steps from 4 to 9.

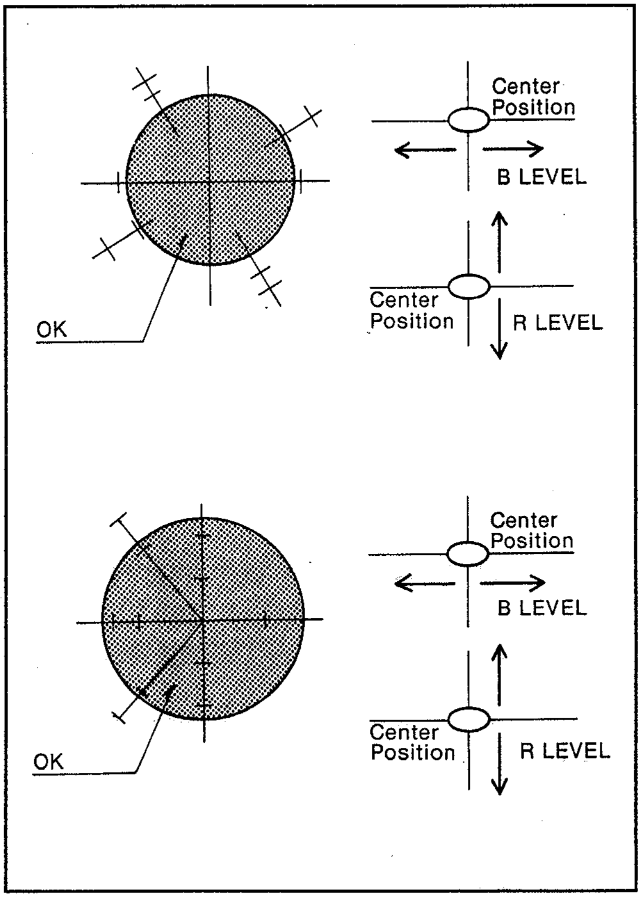


Figure C-27.

7-3. VTR SECTION

7-3-1. PREPARATION

1. Remove the right panel and open the process C.B.A.
   (refer to page 2-3 of service manual, volume 1)
2. Supply an external DC to the unit.
3. Connect a monitor TV to the VTR video output (BNC).

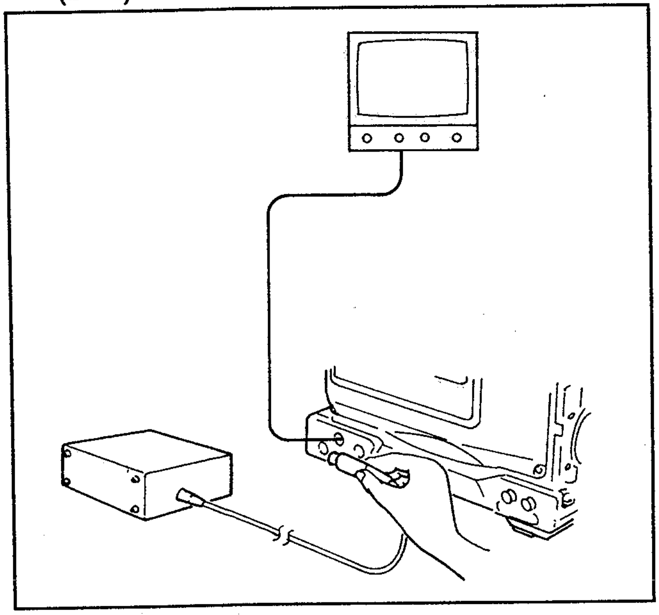


Figure V1.

7-3-2. SETTING OF THE CONTROLS AND ON-SCREEN MENU FOR THE VTR ADJUSTMENTS

Unlens otherwise specified, set the controls and menu as shown below.

- POWER SW : ON
- OUTPUT SELECTOR SW (CAM/BAR) : BAR
- AUDIO IN SELECTOR SW : REAR LINE
- MONITOR SW : MIX
- AUDIO AGC SW : ON
- S-VHS REC MENU : AUTO
- LINE CH1/CH2 MENU : 0dB
- HI-FI REC MENU : ON
- DOLBY NR MENU : OFF
- STEREO/MONO MENU : STEREO

[POWER SUPPLY C.B.A.]

7-3-3. CONFIRMATION OF EXTERNAL +12V DC

1. Before starting the following power supply adjustments, confirm that DC voltage of the external power supply unit is +12V +/- 0.1V.

7-3-4. DC VOLTAGE ADJ.

BOARD	POWER SUPPLY C.B.A.
TP	SEE TABLE BELOW
ADJ.	SEE TABLE BELOW
TAPE	WITHOUT TAPE
INPUT	+12V ± 0.1V DC
MODE	STOP
M.EQ	D.V.M.
SPEC.	SEE TABLE BELOW

1. Connect the hot and GND lines of the D.V.M. to the HOT and GND test points on the power supply circuit according to the table in Figure V2 on the next page.
2. Adjust the related variable resistor so that the DC voltage is within the specification as shown in Figure V2 on the next page.

Note : 1. After the CCD -11V adjustment, confirm the CCD +12V and CCD +10V. If the voltages are not in the specifications, readjust VR1006.

NAME OF ADJUSTMENT	TEST POINT		ADJUSTMENT	SPECIFICATION	
	GND	HOT		NTSC	PAL
CAMERA 5V	TPG1001 [A3]	TP1004 [A3]	VR1005 [A1]	+5.6V ± 0.1V	+5.9V ± 0.1V
DIGITAL 5V	TPG1001 [A3]	TP1007 [A2]	VR1004 [A2]	+5V ± 0.1V	+5V ± 0.1V
ANALOGUE 5V	TPG1001 [A3]	TP1017 [A2]	VR1003 [A2]	+5.8V ± 0.05V	+5.8V ± 0.05V
ANALOGUE 9V	TPG1001 [A3]	TP1003 [A2]	VR1001 [A2]	+9V ± 0.1V	+9V ± 0.1V
ANALOGUE 3.5V	TPG1001 [A3]	TP1007 [A2]	VR1002 [A3]	+3.5V ± 0.1V	+3.5V ± 0.1V
CCD -11V	TPG1001 [A3]	TP1013 [D3]	VR1006 [D2]	-11.2V ± 0.1V	-11.2V ± 0.1V
CCD 20V	TPG1001 [A3]	TP1014 [D3]	CONFIRMATION	+20V ± 0.3V	+16V ± 0.3V (CHECK ONLY) TE2-4018
CCD 10V	TPG1001 [A3]	COLLECTOR OF Q518 [A2] *(ON CCD DRIVE P.C.B.)*	CONFIRMATION	-10V +0.3V/-0V	-10V +0.3V/-0V

Figure V2.

[SYSTEM CONTROL C.B.A.]

7-3-5. PG SHIFTER ADJUSTMENT

BOARD	SYSTEM CONTROL C.B.A.
TP	TP6006 [D1], VTR VIDEO OUTPUT
ADJ.	VR6001 [D1]
TAPE	MONOSCOPE OF ALIGNMENT TAPE
INPUT	NO INPUT SIGNAL
MODE	PLAY
M.EQ	OSCILLOSCOPE
SPEC.	T = 5.5H +1.0H / -0H

1. Connect the scope CH1 to TP6006 and CH2 to the VTR video output connector.
2. Play back the monoscope portion of the alignment tape.
3. Adjust VR6001 so that the timing "T" is 5.5H +1.0H / -0H.

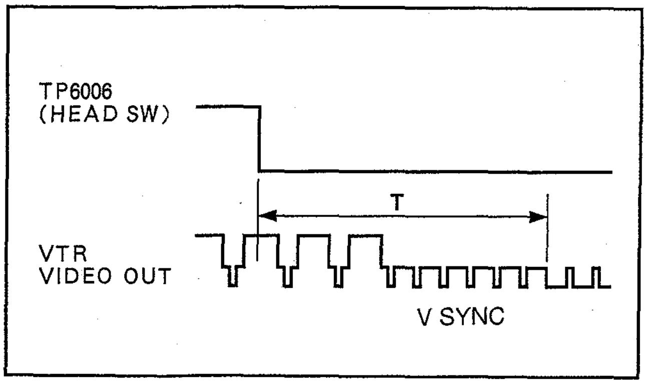


Figure V3.

[VIDEO C.B.A.]

7-3-6. AGC VCC ADJ.

BOARD	VIDEO SUB ON VIDEO C.B.A.
TP	TP1
ADJ.	VR1
TAPE	WITHOUT TAPE
INPUT	+12V ± 0.1V DC
MODE	STOP
M.EQ	D.V.M.
SPEC.	4.55V ± 0.02V DC

1. Connect the D.V.M. to TP on the video sub board which is located on the video board and adjust VR1 on the same board so that the voltage is 4.55V ± 0.02V DC.

7-3-7. YNR ADJ.

BOARD	VIDEO C.B.A.
TP	TP3004 [D1]
ADJ.	VR3005 [D1]
TAPE	COLOR BAR OF ALIGNMENT TAPE OF COLOR BAR PRERECORDED TAPE
INPUT	NO INPUT SIGNAL
MODE	PLAYBACK
M.EQ	OSCILLOSCOPE
SPEC.	A = MINIMUM

1. Connect the scope to TP3004 and adjust VR3005 so that level "A" is minimum.

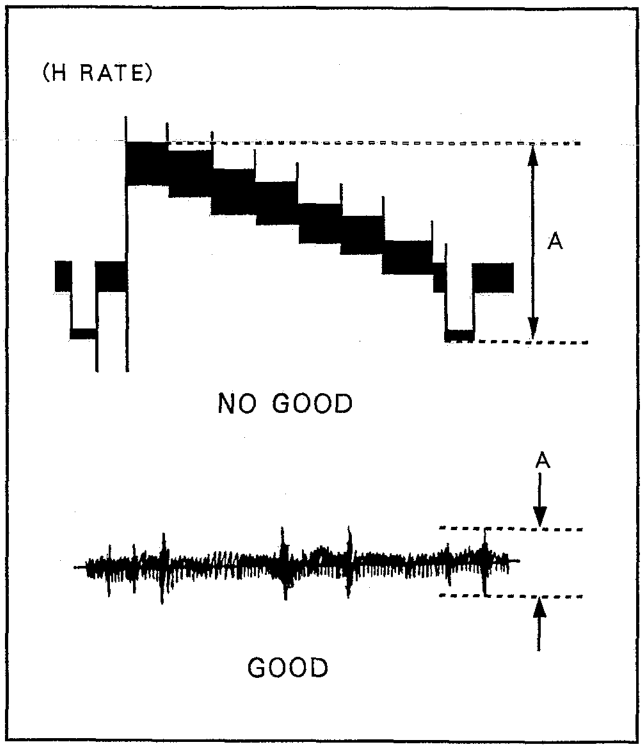


Figure V4.

7-3-8. CNR ADJ.

BOARD	VIDEO C.B.A.
TP	TP8301 [B1]
ADJ.	VR8301 (C PHASE) [D2] VR8302 (C GAIN) [B1]
TAPE	COLOR BAR OF ALIGNMENT TAPE OF COLOR BAR PRERECORDED TAPE
INPUT	NO INPUT SIGNAL
MODE	PLAYBACK
M.EQ	OSCILLOSCOPE
SPEC.	A = MINIMUM

1. Connect the trigger of scope to TP6006 (Head SW) on the system control C.B.A. to trigger the scope.
2. Connect the scope to TP8301 and alternately adjust VR8301 and VR8302 so that the level "A" is minimum as shown in Figure V5.

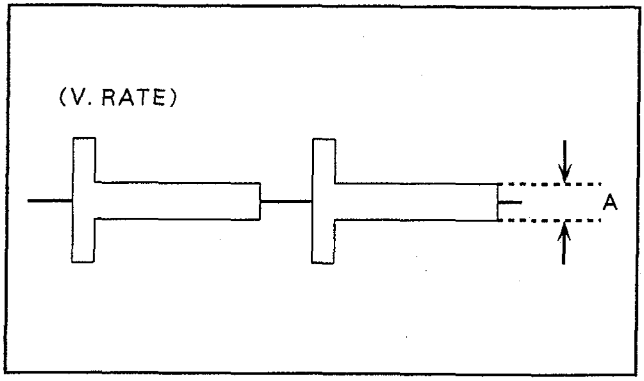


Figure V5.

7-3-9. CAMERA Y INPUT ADJ.

BOARD	VIDEO C.B.A.
TP	TP3014 [E2]
ADJ.	VR3009 [E1]
TAPE	WITHOUT TAPE
INPUT	INTERNAL COLOR BAR SIGNAL
MODE	STOP
M.EQ	OSCILLOSCOPE
SPEC.	A = 286mVp-p ± 6mV (NTSC) A = 300mVp-p ± 6mV (PAL)

1. Connect the scope to TP3014 and adjust VR3009 so that the sync level is within the specification.

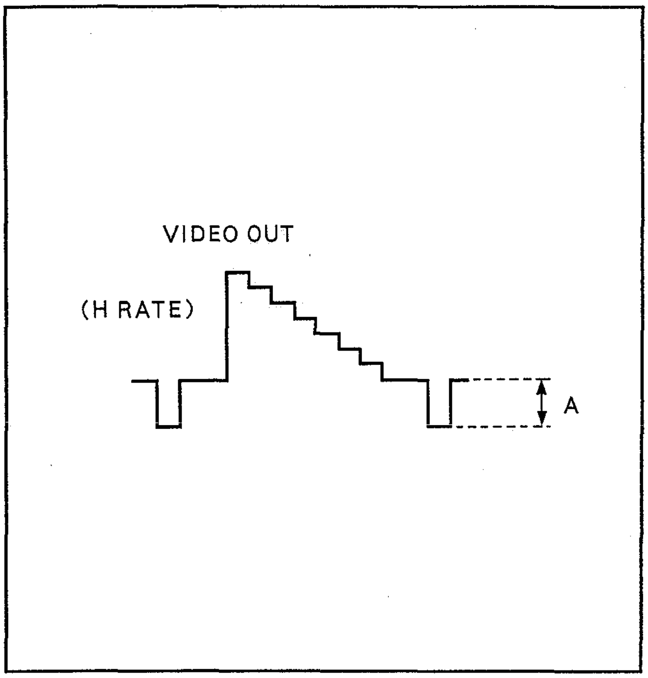


Figure V6.

7-3-10. BALANCED MODULATOR BALANCE ADJ.

BOARD	VIDEO C.B.A.
TP	VTR VIDEO OUTPUT CONNECTOR
ADJ.	VR8003 [D2], VR8004 [D2]
TAPE	WITHOUT CASSETTE TAPE
INPUT	INTERNAL COLOR BAR SIGNAL
MODE	STOP
M.EQ	OSCILLOSCOPE
SPEC.	A = MINIMUM

1. Connect the scope to the VTR video output connector and expand the portion "A" of the signal as shown in Figure V7.
2. Adjust VR8003 and VR8004 so that the level "A" is minimum as shown in Figure V7.

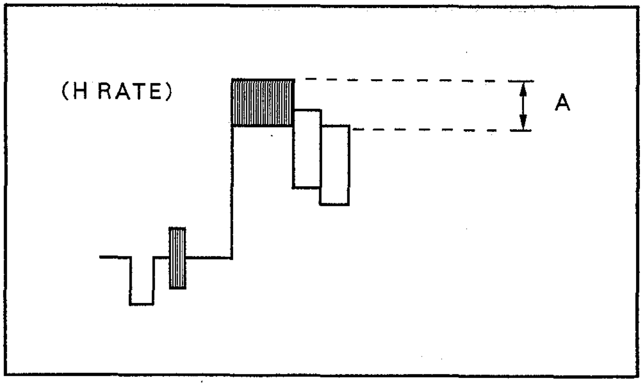


Figure V7.

7-3-11. Y OUTPUT LEVEL ADJ.

BOARD	VIDEO
TP	Y OUTPUT OF S-VIDEO CONNECTOR
ADJ.	VR3014 [D1]
TAPE	WITHOUT CASSETTE TAPE
INPUT	INTERNAL COLOR BAR SIGNAL
MODE	STOP
M.EQ	OSCILLOSCOPE
SPEC.	A = 286mV ± 6mV, B = 835mVp-p ± 30mV (NTSC) A = 300mV ± 6mV, B = 1000VP-P ± 50mV (PAL)

Note: 1. The color bar signal is 75%.
2. The signal needs to be terminated.

1. Connect the scope to the Y output of the s-video camera connector as shown in Figure V8.

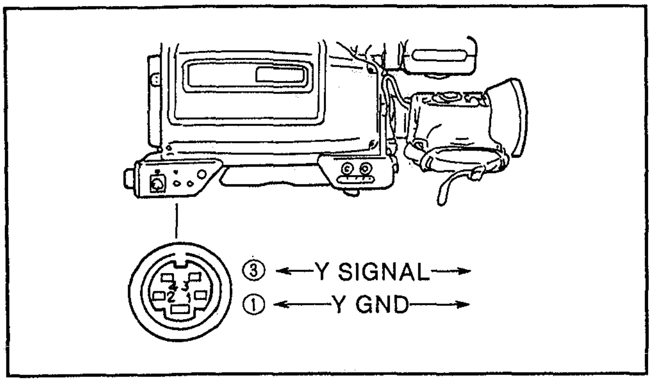


Figure V8.

2. Adjust VR3014 so that the sync level "A" is within the specification.
3. Confirm that the video level "B" is within the specification.

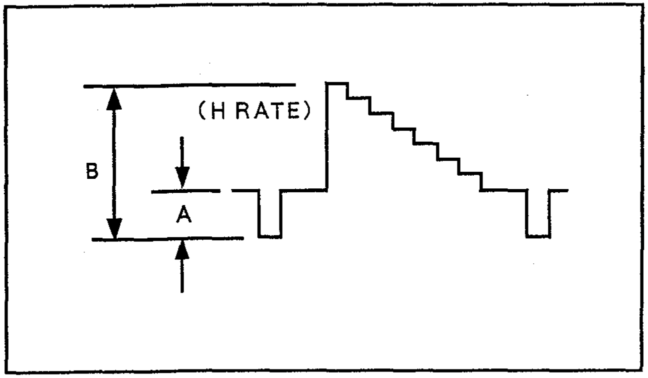


Figure V9.

7-3-12. VTR VIDEO OUTPUT ADJ.

BOARD	VIDEO
TP	VTR VIDEO OUTPUT CONNECTOR
ADJ.	VR3013 [D1]
TAPE	WITHOUT CASSETTE TAPE
INPUT	INTERNAL COLOR BAR SIGNAL
MODE	STOP
M.EQ	OSCILLOSCOPE
SPEC.	A = 286mV ± 6mV, B = 835mVp-p ± 30mV (NTSC) A = 300mV ± 6mV, B = 1000mVp-p ± 50mV (PAL)

1. Connect the scope to the VTR video output connector and adjust VR3013 so that the sync level "A" is within the specification.
2. Confirm that the video level "B" is within the specification.

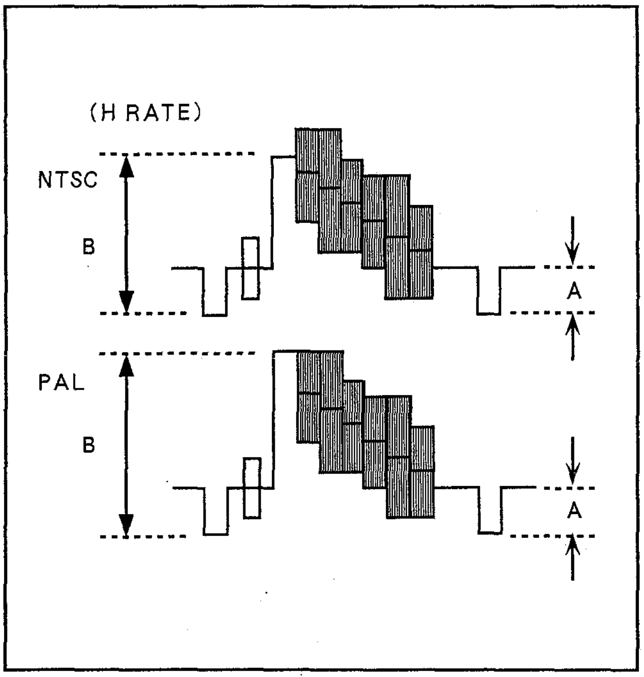


Figure V10.

7-3-13. BURST ANGLE ADJ.

PAL ONLY

BOARD	VIDEO
TP	VTR VIDEO OUTPUT CONNECTOR
ADJ.	VR8001 [C2]
TAPE	WITHOUT CASSETTE TAPE
INPUT	INTERNAL COLOR BAR SIGNAL
MODE	STOP
M.EQ	VECTORSCOPE
SPEC.	SEE FIGURE BELOW

1. Connect the vectorscope to the VTR video output connector and adjust VR8001 so that the phase (angle) between burst signal and scale of the burst on the vectorscope are matched as shown in Figure V11.

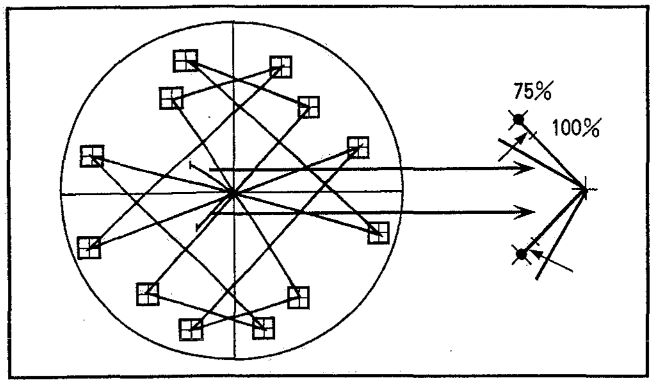


Figure V11.

7-3-14. VTR BURST LEVEL ADJ.

BOARD	VIDEO
TP	VTR VIDEO OUTPUT CONNECTOR
ADJ.	VR8303 [B1]
TAPE	WITHOUT CASSETTE TAPE
INPUT	INTERNAL COLOR BAR SIGNAL
MODE	STOP
M.EQ	VECTORSCOPE
SPEC.	SEE FIGURE BELOW

1. Connect the vectorscope to the VTR video output connector and adjust VR8303 so that the burst level is 75% against the reference indication of the burst on the vectorscope as shown in Figure V12.

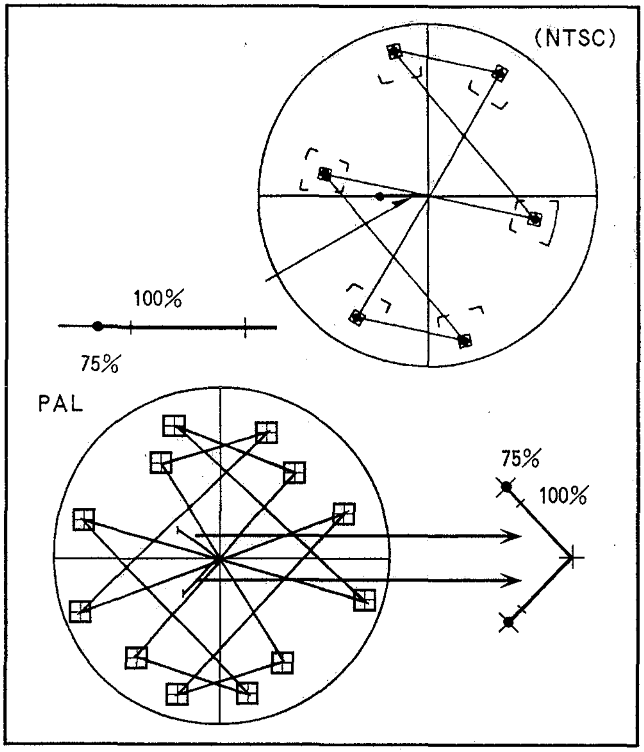


Figure V12.

7-3-15. VECTOR ADJ.

BOARD	VIDEO
TP	VTR VIDEO OUTPUT CONNECTOR
ADJ.	VR8006 (R-Y) [E2], VR8007 (B-Y) [E2]
TAPE	WITHOUT CASSETTE TAPE
INPUT	INTERNAL COLOR BAR SIGNAL
MODE	STOP
M.EQ	OSCILLOSCOPE
SPEC.	ALL VECTOR DOTS ARE IN THE VECTOR BOXES

1. Connect the vectorscope to the VTR video output onnector and set the vectorscope in the color bar 75% mode.
2. Adjust VR8006 (R-Y) and VR8007 (B-Y) so that the all vector dots are in the imaginary vector area as shown in Figure V13.

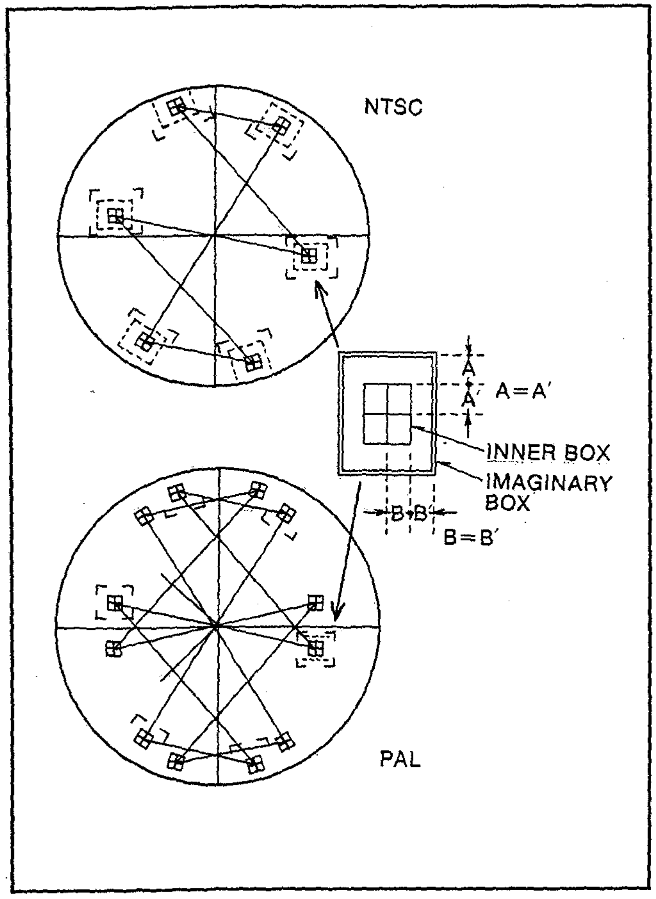


Figure V13.

7-3-16. WHITE PEAK FREQUENCY (S-VHS) ADJ.

BOARD	VIDEO
TP	TP3003 [B1]
ADJ.	VR3004 [C1]
TAPE	WITHOUT TAPE
INPUT	7MHz, 250mVp-p
MODE	STOP
M.EQ	OSCILLOSCOPE
SPEC.	A = MINIMUM

1. Connect the scope to the camera video output.
2. Set the unit in the CAM (camera) mode and manual iris mode.
3. Aim the camera to a plain white paper and adjust the iris so that the video level is 1.0Vp-p.

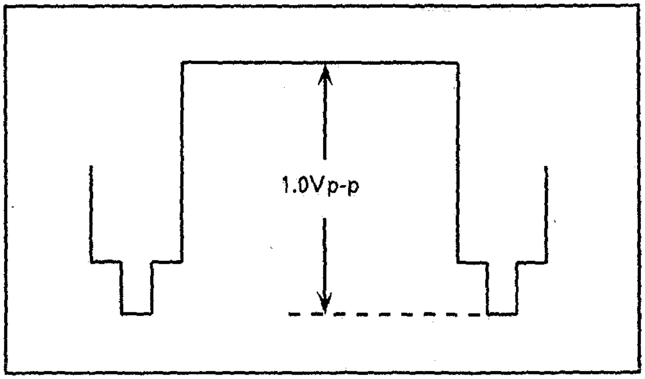


Figure V14.

4. Set the output of the sine wave signal generator to 7MHz, 250mVp-p and supply it to TP3003 though 0.001μF capacitor.

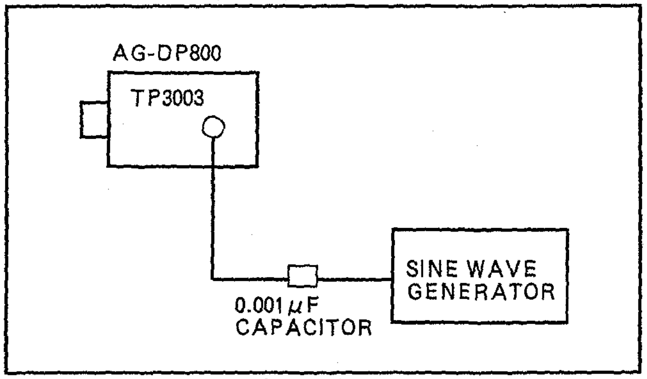


Figure V15.

5. Connect the scope to TP3003 and adjust VR3004 so that the level "A" is minimum as shown in Figure V16.

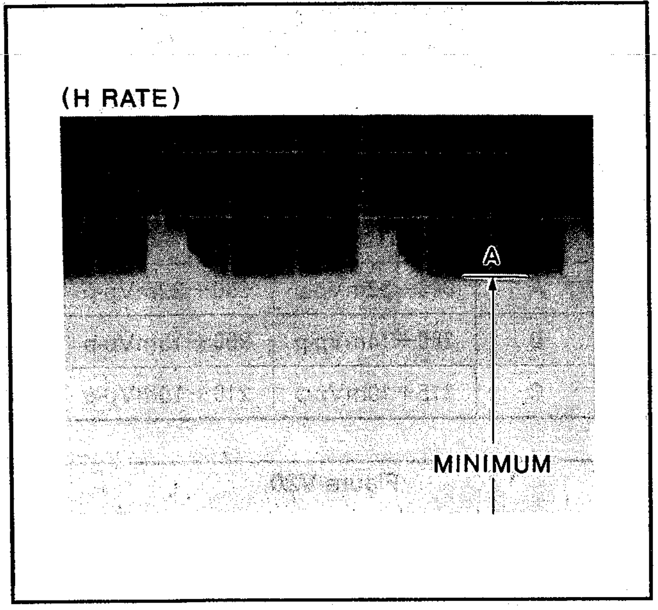


Figure V16.

7-3-17. RECORDING CURRENT (S-VHS) ADJ.

BOARD	VIDEO
TP	TP5001 (GND) [B2], TP5002 (HOT) [B2]
ADJ.	VR3012 (S REC Y) [B2] VR8002 (REC C) [B2]
TAPE	S-VHS BLANK CASSETTE TAPE
INPUT	INTERNAL COLOR BAR SIGNAL / CAMERA SIGNAL (WITH LENSE CAP)
MODE	S-VHS REC
M.EQ	OSCILLOSCOPE
SPEC.	A(C) = 36mVp-p+0/-2mV (NTSC) B(Y) = 110mVp-p ± 5mV (NTSC) A(C) = 32mVp-p+0/-2mV (PAL) B(Y) = 110mVp-p ± 5mV (PAL)

1. Insert a S-VHS work cassette tape into the cassette compartment and place the unit in the recording mode.
2. Set the CAM / BAR select switch at the BAR (color bar) position.
3. Connect the scope to TP5001 (GND) and TP5002 (HOT), and rotate VR3012 so that the Y recording current is minimum.
4. Adjust VR8002 so that the C recording current level "A" is in the specification.
5. Set the CAM / BAR select switch at the CAM (camera) position and close the lense with a lense cap.
6. Adjust VR3012 so that the Y recording current level "B" is within the specification.

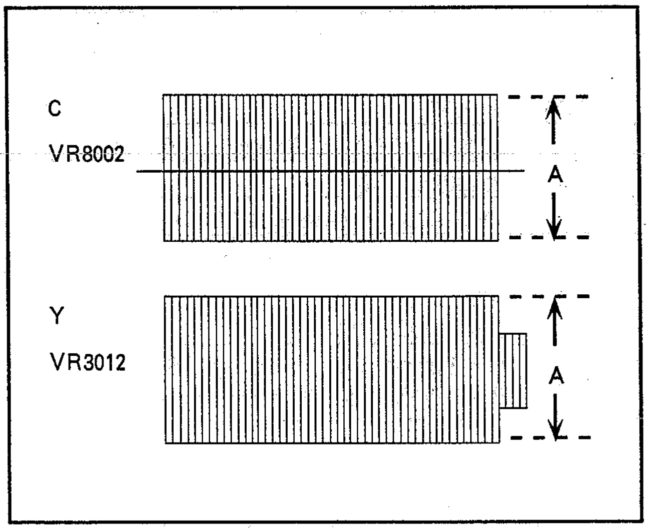


Figure V17.

7-3-18. RECORDING CURRENT (VHS)ADJ.

BOARD	VIDEO
TP	TP5001 [A1], TP5002 [A1]
ADJ.	VR3011 [B1]
TAPE	VHS BLANK CASSETTE TAPE
INPUT	CAMERA SIGNAL (WITH LENSE CAP)
MODE	REC
M.EQ	OSCILLOSCOPE
SPEC.	A(Y) = 110mVp-p ± 5mV

1. Insert a VHS work cassette tape into the cassette compartment and place the unit in the recording mode.
2. Set the CAM / BAR switch at the CAM (camera) position and close the lense with a lense cap.
3. Connect the scope to TP5001 (GND) and TP5002 (HOT), and adjust VR3011 so that the recording current level "A" is 110mVp-p ± 5mV.

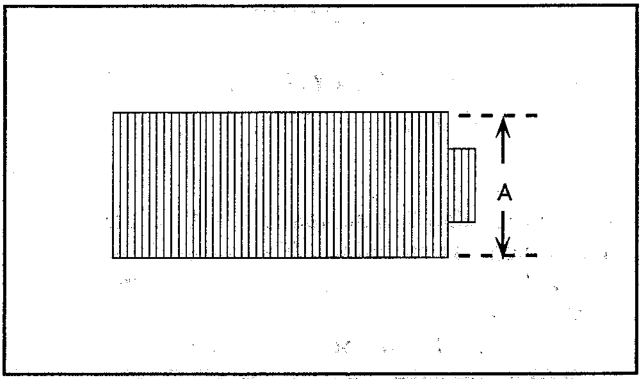


Figure V18.

7-3-19. VHS Y PLAYBACK LEVEL ADJ.

BOARD	VIDEO
TP	VTR OUTPUT CONNECTOR (BNC)
ADJ.	VR3010 [E2]
TAPE	VHS BLANK CASSETTE TAPE
INPUT	INTERNAL COLOR BAR SIGNAL
MODE	REC
M.EQ	OSCILLOSCOPE
SPEC.	A = 835mVp-p ± 16mV (NTSC) B = 1000mVp-p ± 20mV (PAL)

1. Record the internal color bar signal in VHS mode and play back the portion just recorded.
2. Connect the scope to the VTR video output connector and adjust VR3010 so that the Y level "A" is within the specification.

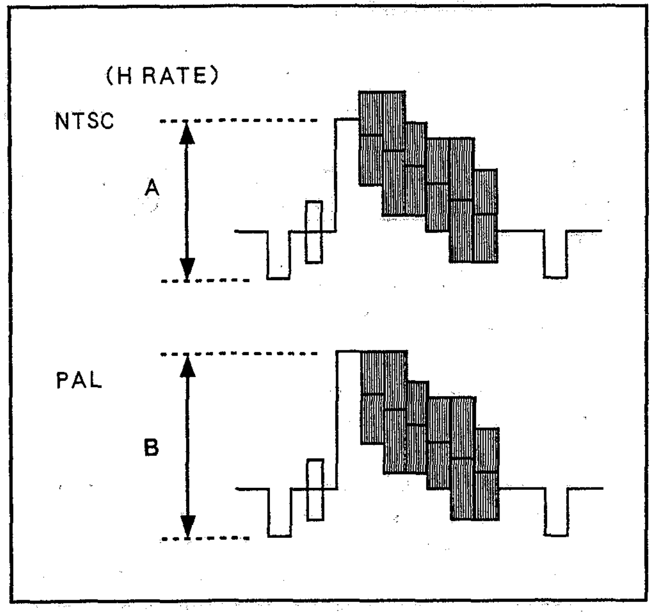


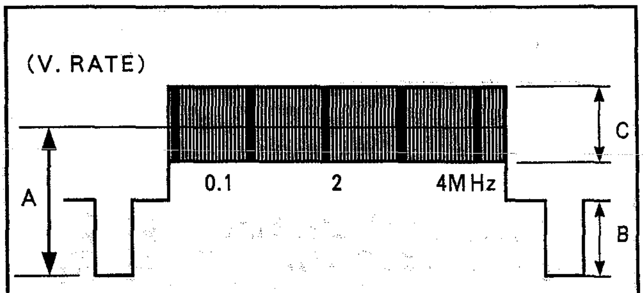
Figure V19.

7-3-20. VHS PLAYBACK EQUALIZER ADJ.

Preparation

When performing this adjustment, a VHS cassette tapes which has recorded 30% sweep signal by VHS/S-VHS recorder model AG-7750 as the following steps.

(1) Supply a 30% sweep signal as shown in Figure V20 to the video input of the AG-7750.



LEVEL	NTSC	PAL
A	643+32mVp-p	650+32mVp-p
B	286+14mVp-p	300+15mVp-p
C	215+10mVp-p	210+10mVp-p

Figure V20.

(2) Connect the scope to the video output of the AG-7750.

(3) Place the unit in the recording mode.

(4) Play back the portion just recorded by the same recorder and make sure that the level ratio between 0.1MHz and 2MHz is as shown in Figure V21.

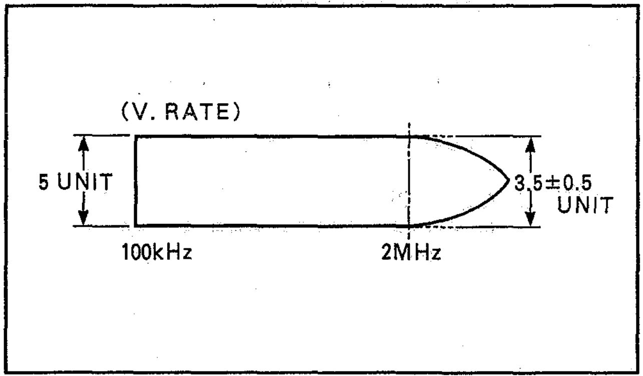


Figure V21.

BOARD	VIDEO
TP	Y OUTPUT OF S-VIDEO CONNECTOR
ADJ.	VR3007 [C1]
TAPE	30% SWEEP RECORDED CASSETTE TAPE
INPUT	NO INPUT SIGNAL
MODE	PLAYBACK
M.EQ	OSCILLOSCOPE
SPEC.	0.1MHz : 2MHz = 100% : 100% ± 5%

1. Connect the scope to the video output connector of the AG-SP800.
2. Play back the above 30% seep signal recorded tape and adjust VR3003 so that the level ratio between 0.1MHz and 2MHz is within the specification.

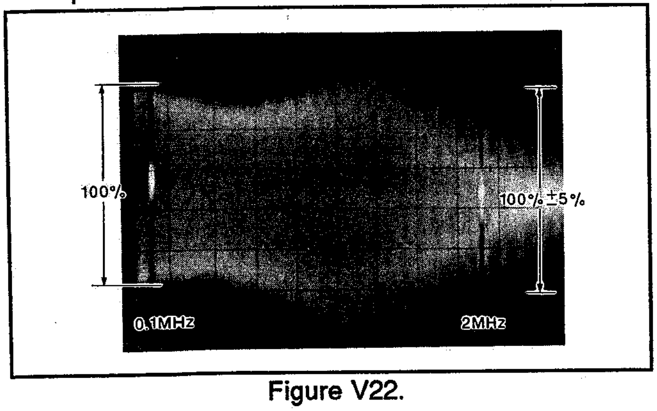


Figure V22.

7-3-21. S-VHS Y PLAYBACK LEVEL ADJ.

BOARD	VIDEO
TP	VTR OUTPUT CONNECTOR (BNC)
ADJ.	VR3006 [C1]
TAPE	S-VHS BLANK CASSETTE TAPE
INPUT	INTERNAL COLOR BAR SIGNAL
MODE	REC
M.EQ	OSCILLOSCOPE
SPEC.	A = 835mVp-p ± 16mV (NTSC) A = 1000mVp-p ± 20mV (PAL)

1. Record the internal color bar signal in the S-VHS mode and play back the portion just recorded.
2. Connect the scope to the video output connector and adjust VR3006 so that the Y level "A" is within the specification.

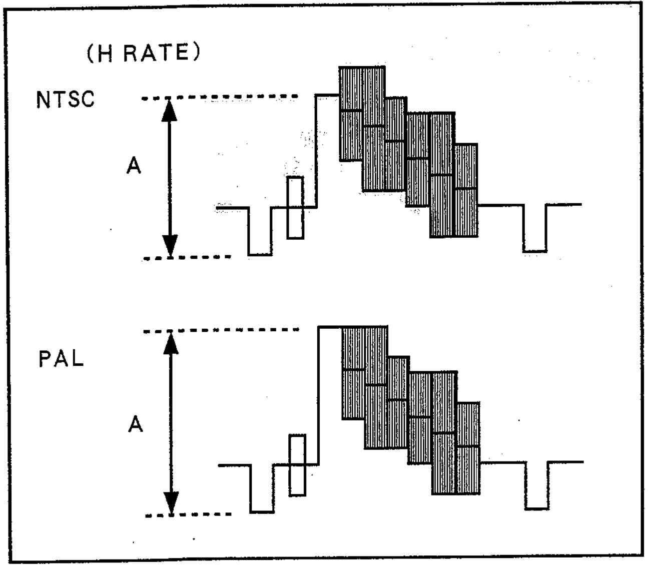


Figure V23.

7-3-22. S-VHS COSIN EQUALIZER ADJ.

Preparation

When performing this adjustment, a S-VHS cassette tape which has recorded 30% seep signal in the S-VHS mode by S-VHS recorder model AG-7750 as the following steps.

(1) Supply the sweep signal as shown in Figure to the video input of AG-7750.
(2) Connect the scope to the video output of the AG-7750.
(3) Place the unit in the S-VHS recording mode.
(4) Play back the portion just recorded by the same recorder and make sure that the level ration between 0.1MHz and 4MHz is as shown in Figure V24.

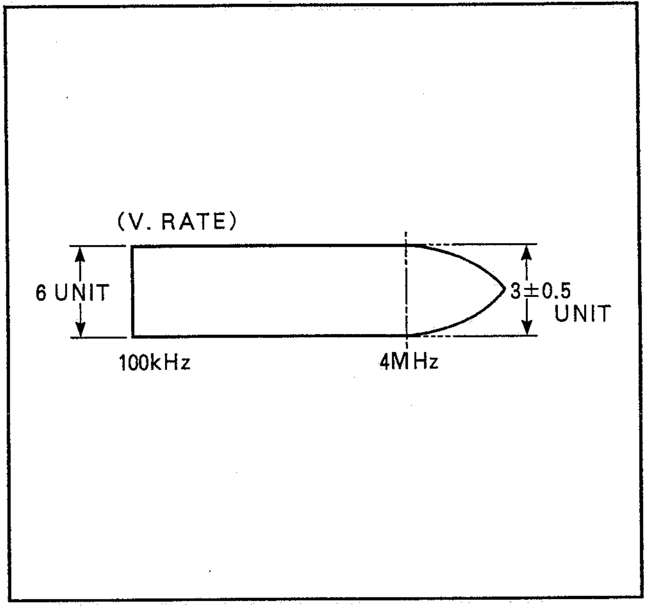


Figure V24.

BOARD	VIDEO
TP	Y OUTPUT OF S-VIDEO CONNECTOR
ADJ.	VR3007 [C1]
TAPE	30% SWEEP RECORDED TAPE
INPUT	NO INPUT SIGNAL
MODE	PLAYBACK
M.EQ	OSCILLOSCOPE
SPEC.	0.1MHz : 4MHz = 100% : 63% ± 5% (NTSC) 0.1MHz : 4MHz = 100% : 70% ± 5% (PAL)

1. Connect the scope to the video output connector of the AG-DP800.
2. Play back the above 30% seep signal recorded tape and adjust VR3007 so that the level ratio between 0.1MHz and 4MHz is within the specification.

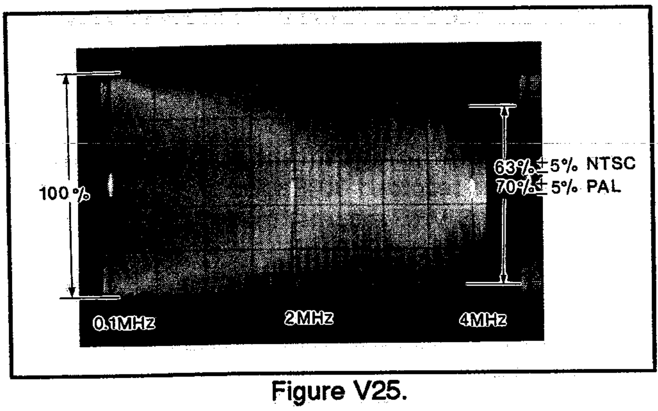


Figure V25.

[AUDIO C.B.A.]

Note: Unless otherwise specified;

1. Use the following audio cables with XLR connectors between the sine wave signal generator and audio input connectors.

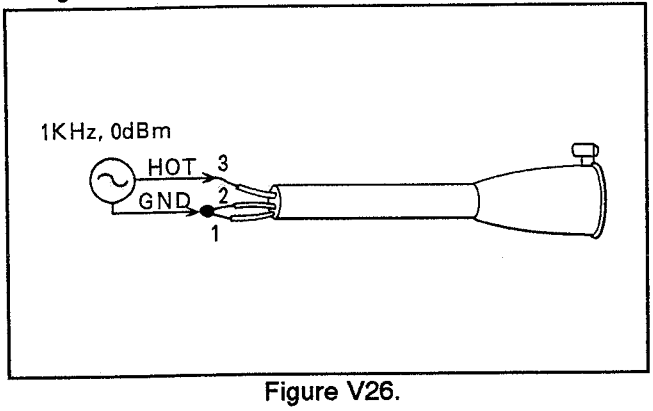


Figure V26.

2. Reference audio input signal is 1KHz, 0dBm.

7-3-23. E-E LEVEL ADJ.

BOARD	AUDIO & SYSTEM CONTROL C.B.A.
TP	AUDIO LINE OUTPUTS CH1/CH2
ADJ.	NORMAL : VR4101 (CH1) [D2] VR4201 (CH2) [D3] FM : VR4301 (CH1) [E3] VR4401 (CH2) [D3]
TAPE	WITHOUT TAPE
INPUT	NO INPUT SIGNAL
MODE	STOP
M.EQ	V.T.V.M.
SPEC.	-8.0dBv ± 0.2dBv

1. Supply a 1KHz, 0dBm sine wave signal to the audio CH1 and CH2 inputs.
2. Select the audio select switch on the panel at the NORMAL position.
3. Connect the V.T.V.M. to the audio CH1 and CH2 output.
4. Adjust VR4101 (CH1) and VR4201 (CH2) so that the both levels CH1 and CH2 are -0.8dBv ± 0.2dBv.

7-3-24. NORMAL AUDIO PLAYBACK FREQUENCY RESPONSE ADJ.

Note: After completion of this adjustment, "Normal Audio Playback Gain Adjustment" should be made.

BOARD	AUDIO & SYSTEM CONTROL C.B.A.
TP	AUDIO LINE OUTPUTS CH1/CH2
ADJ.	VR4102 (CH1) [A2], VR4202 (CH2) [B3]
TAPE	VR4102 (CH1) [B2], VR4202 (CH2) [B3]
INPUT	NO INPUT SIGNAL
MODE	PLAYBACK
M.EQ	OSCILLOSCOPE
SPEC.	400Hz : 5KHz = 0 : ± 0.5dB

1. Connect the scope to the audio line output.
2. Set VR4103 (CH1 / GAIN) and VR4203 (CH2 / GAIN) around the center position.
3. Play back the portion 5 of alignment tape.
4. Adjust VR4102 (CH1) and VR4202 (CH2) so that the levels between 400Hz and 5KHz portions are equal ± 0.5dB.

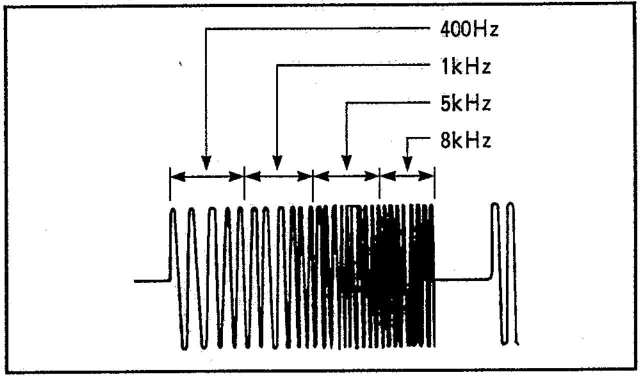


Figure V27.

7-3-25. NORMAL AUDIO PLAYBACK GAIN ADJ.

Note: This adjustment should be made after completion of "Normal Audio Playback Frequency Adjustment".

Preparation

When performing this adjustment, a VHS cassette tape which has recorded 1KHz, 0dBm (0Vμ/0.775rms) sine-wave signal by AG-7750 as the following steps.

(1) Set the sine-wave signal generator to 1KHz, 0dBm (0.775rms) and supply it to the audio inputs of the AG-7750.

(2) Place the AG-7750 in the recording mode and make a prerecorded tape.

(3) Connect the V.T.V.M. to the outputs of the AG-7750.

(4) Play back the portion just recorded and make sure that the normal audio output levels of the AG-7750 are 0dB.

BOARD	AUDIO & SYSTEM CONTROL
TP	AUDIO LINE OUTPUT CH1/CH2
ADJ.	VR4102 (CH1) [B2], VR4202 (CH2) [B3]
TAPE	NO INPUT SIGNAL
INPUT	0dBm, 1KHz PRERECORDED TAPE
MODE	PLAYBACK
M.EQ	V.T.V.M.
SPEC.	-8dBv +0.2dBv / -0dBv

1. Set the AUDIO HI-FI/NORM switch at the NORM (normal audio) position.
2. Connect the V.T.V.M. to the audio line outputs.
3. Play back the above 0dBm, 1KHz pre-recorded tape and adjust VR4102 (CH1) and VR4202 (CH2) so that the normal audio output level is -8dBv + 0.2 / -0dBv.

7-3-26. NORMAL AUDIO BIAS CURRENT ADJ.

BOARD	AUDIO & SYSTEM CONTROL
TP	TP4101(HOT)[A2], TP4102(COLD)(CH1) TP4201(HOT)[B3], TP4201(COLD)[B3](CH2)
ADJ.	S-VHS : VR4105 (CH1) [A3] VR4205 (CH2) [A3] VHS : VR4106 (CH1) [A3] VR4206 (CH2) [A3]
TAPE	VHS BLANK AND S-VHS BLANK CASSETTE TAPE
INPUT	NO INPUT SIGNAL
MODE	REC
M.EQ	V.T.V.M.
SPEC.	S-VHS : 6.0mVrms ± 0.2mVrms VHS : 4.0mVrms ± 0.2mV

1. Insert a S-VHS cassette tape and place the unit in the S-VHS recording mode.
2. Connect the V.T.V.M. to TP4101 (HOT) and TP4102 (COLD) for the audio CH1.
3. Adjust VR4105 (CH1) so that the bias current is 6.0mVrms ± 0.2Vrms.
4. Change the connection of the V.T.V.M. to TP4201 (HOT) and TP4202 (COLD) for the audio CH2.
5. Adjust VR4205 so that the bias current is 6.0mVrms ± 0.2Vrms.
6. Change the cassette tape to a VHS cassette tape and place the unit in the recording mode.
7. Connect the V.T.V.M. the same as steps 2 and 4.
8. Adjust VR4106 (CH1) and VR4206 (CH2) so that the bias current is 4.0mVrms ±0.2Vrms.

7-3-27. NORMAL AUDIO RECORDING CURRENT ADJ.

BOARD	AUDIO & SYSTEM CONTROL
TP	TP4103 (CH1) [B2] , TP4203 (CH2) [B2] LINE OUTPUTS
ADJ.	VR4104 (CH1) [C2], VR4204 (CH2) [C2]
TAPE	VHS/S-VHS BLANK CASSETTE TAPES
INPUT	1KHz, 0dBm SINE WAVE SIGNAL
MODE	REC/PLAYBACK
M.EQ	V.T.V.M.
SPEC.	S-VHS : 0dB ± 0.5dB VHS : 0dB ± 1.0dB

1. Supply a 1KHz, 0dBm to the audio line inputs CH1 and CH2.
2. Insert a S-VHS cassette tape to the unit and place the unit in the S-VHS recording mode.
3. Connect the V.T.V.M. to TP4103 (CH1).
4. Temporally adjust VR4104 (CH1) so that the level is 400mVrms.

5. Change the connection of the V.T.V.M. to the audio CH1 line output and measure the level of it in the recording mode.
   Suppose this level is 0dB and "A".
6. Play back the portion just recorded and measure the level of the line output "B".
7. Compare the level of line output in the recording mode "A" and playback mode "B".
8. If the difference between level "A" and "B" is not within 0dB ± 0.5dB, slightly readjust VR4104 and repeat steps from 5 to 8.
9. Perform the above procedure for the audio CH2.
10. Insert a VHS cassette tape to the unit and place the unit in the recording mode.
11. Perform the same steps from 3 to 9 so that the difference between level "A" and "B" is 0dB ± 1.0dB.

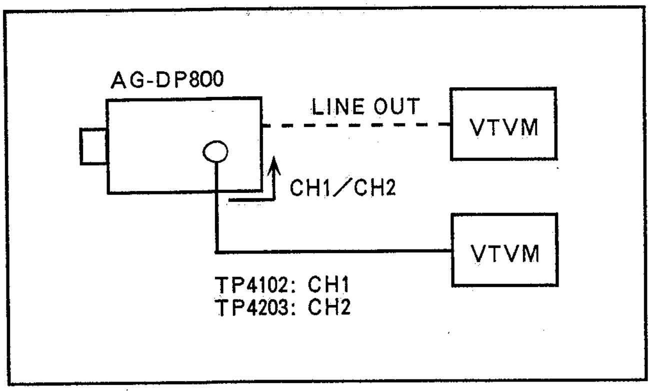


Figure V28.

7-3-28. HI-FI AUDIO CARRIER FREQUENCY ADJ.

BOARD	AUDIO & SYSTEM CONTROL
TP	TP4302 (CH1) [D2], TP4402 (CH2) [E3]
ADJ.	VR4302 (CH1) [D2], VR4402 (CH2) [E3]
TAPE	WITHOUT CASSETTE TAPE
INPUT	NO INPUT SIGNAL
MODE	STOP
M.EQ	FREQUENCY COUNTER
SPEC.	NTSC : CH1 = 1.3MHz ± 10KHz CH2 = 1.7MHz ± 10KHz PAL : CH1 = 1.4MHz ± 10KHz CH2 = 1.8MHz ± 10KHz

1. Connect the frequency counter to TP4302 (CH1) and adjust VR4302 (CH1) so that the frequency for the audio CH1 is in the specification.
2. Change the connection of the frequency counter to TP4402 (CH2) and adjust VR4402 (CH2) so the frequency for the audio CH2 is in the specification.

7-3-29. HI-FI AUDIO DEVIATION ADJ.

A. LEGALE ADJ.

BOARD	AUDIO & SYSTEM CONTROL C.B.A.
TP	TP4302 (CH1) [E3], TP4402 (CH2) [E3]
ADJ.	VR4303 (CH1) [D2], TP4403 (CH2) [E3]
TAPE	WITHOUT CASSETTE TAPE
INPUT	1KHz, 0dBm SINE WAVE SIGNAL
MODE	STOP
M.EQ	SPECTRUM ANALYZER
SPEC.	FW = 100 ± 5KHz

1. Supply a 1KHz 0dBm sine wave signal to the audio inputs.
2. Connect the spectrum analyzer to TP4302 (CH1) and set the center frequency to 1.3MHz (NTSC) / 1.4MHz (PAL).
3. Adjust VR4303 (CH1) so that the width "fw" is 100KHz ± 5KHz.
4. Change the connection of the spectrum analyzer to TP4402 (CH2) and set the center frequency to 1.7MHz (NTSC) / 1.8MHz (PAL)
5. Adjust VR4403 (CH2) so that the width "fw" is 100KHz ± 5KHz.

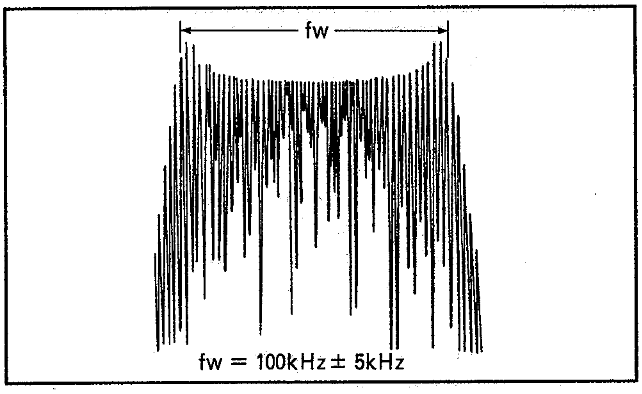


Figure V29.

B. SIMPLIFIED ADJ.

Preparation

When performing this adjustment a VHS cassette which has recorded 1KHz, 0dBm (0Vμ/0.775rms) sine wave signal at the Hi-Fi audio trak by AG-7750 as the following steps.

(1) Set the sine wave signal generator to 1KHz, 0dBm (0.775rms) and supply it to the audio inputs of the AG-7750.
(2) Place the AG-7750 in the recording mode and make a prerecorded tape.
(3) Connect the V.T.V.M. to the outputs of the AG-7750.
(4) Play back the portion just recorded and make sure that the Hi-Fi audio output levels of the AG-7750 are 0dBm ± 0.5dBm.

BOARD	AUDIO & SYSTEM CONTROL C.B.A.
TP	AUDIO LINE OUTPUTS
ADJ.	VR4303 (CH1) [D2], VR4403 (CH2) [E3]
TAPE	1KHz, 0dBm SINE WAVE HI-FI RECORDED TAPE
INPUT	NO INPUT
MODE	REC / PLAYBACK
M.EQ	V.T.V.M.
SPEC.	-8dBv ± 0.5dBv

1. Set the Audio Hi-Fi/NORM select switch at the Hi-Fi position.
2. Connect the V.T.V.M. to the audio output connectors.
3. Play back the Hi-Fi audio (1KHz, 0dBm) pre-recorded tape.
4. Adjust VR4303 (CH1) and VR4403 (CH2) so that the output level is -8dBv ± 0.5dBv.

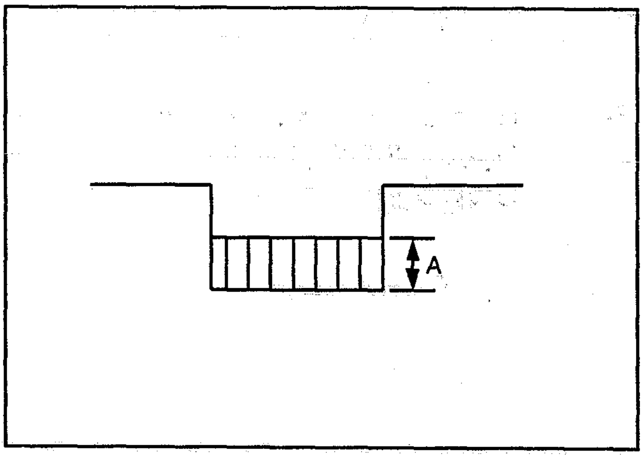


Figure V30.

7-3-30. HI-FI AUDIO RECORDING CURRENT ADJ.

BOARD	TP VIDEO, VR AUDIO & SYSTEM
TP	TP5001 (GND) [A1], TP5003 (HOT) [A1]
ADJ.	VR4601 [F3]
TAPE	BLANK VHS AND S-VHS CASSETTE TAPES
INPUT	NO INPUT SIGNAL
MODE	REC
M.EQ	OSCILLOSCOPE
SPEC.	S-VHS = 200mV ± 5mV VHS = 200mV ± 15mV

1. Insert a S-VHS cassette tape and place the unit in the S-VHS recording mode.
2. Connect the scope to TP5001 (GND) and TP5003 (HOT) on the video P.C.Board.
3. Adjust VR4601 on the audio / system control P.C.Board so that the level of the signal portion "A" is 200mV ± 5mV.
4. Change the cassette tape form the S-VHS to a VHS and place the unit in the recording mode.
5. Make sure that the level "A" is 200mV ± 15mV.

7. ELECTRICAL ADJUSTMENT

7-4. ELECTRICAL VIEWFINDER (EVF) SECTION PREPARATION

7-4-1. PREPARATION

1. Remove the top case of the EVF (refer to page 2-8 of service manual volume 1).
2. Connect the EVF to the main unit.
3. Supply an external DC to the external Dc input of the main unit.

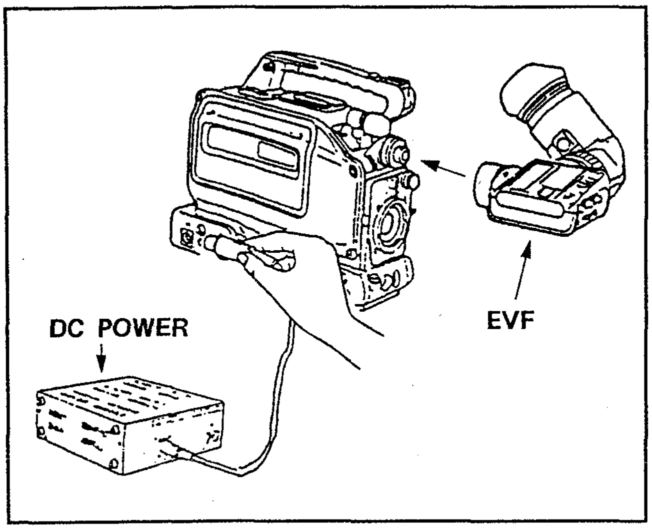


Figure F1.

7-4-2. SETTING OF THE CONTROLS FOR THE ADJUSTMENTS

Unless otherwise specified, set the controls as shown below.

· PEAKING VR	:	12 O'clock position
· CONTRAST VR	:	12 O'clock position
· BRIGHT VR	:	12 O'clock position
· CHARACTER SW	:	OFF
· ZEBRA SW	:	OFF
· TALLY SW	:	OFF
· IRIS SW	:	M (Manual)
· OUTPUT (CAM/BAR) SW	:	CAM

7-4-3. POWER SUPPLY VOLTAGE ADJ.

BOARD	V DEF
TP	TP7001
ADJ.	VR7001
TAPE	WITHOUT TAPE
INPUT	NO INPUT SIGNAL
MODE	STOP
M.EQ	D.V.M.
SPEC.	8.6V ± 0.005V DC

1. Adjust the EVF controls as follows.
   - · BRIGHT VR : Minimum (fully CCW) position
   - · CONTRAST VR : Minimum (fully CCW) position
2. Connect the D.V.M. to TP7001 and adjust VR7001 so that the voltage is 8.6V ± 0.005V.

7-4-4. H FREE-RUN FREQUENCY ADJ.

BOARD	V DEF
TP	TP7401
ADJ.	TR7002
TAPE	WITHOUT TAPE
INPUT	NO INPUT SIGNAL
MODE	STOP
M.EQ	FREQUENCY COUNTER
SPEC.	15.75KHz ± 0.1KHz (NTSC) 15.625KHz ± 0.1KHz (PAL)

1. Connect the frequency counter to TP7401 and adjust VR7002 so that the frequency is within the specification.

7-4-5. V FREE-RUN FREQUENCY ADJ.

BOARD	V DEF
TP	TP7002
ADJ.	VR7006
TAPE	WITHOUT TAPE
INPUT	NO INPUT SIGNAL
MODE	STOP
M.EQ	FREQUENCY COUNTER
SPEC.	50Hz ± 1Hz (NTSC), 42Hz ± 1Hz (PAL)

1. Connect the frequency counter to TP7002 and adjust VR7006 so that the frequency is within the specification.

7-4-6. DEFLECTION YOKE TILT ADJ.

BOARD	- - - - -
TP	CRT
ADJ.	DEFLECTION YOKE
TAPE	MONOSCOPE OF ALIGNMENT TAPE
INPUT	FROM VTR SECTION
MODE	PLAY
M.EQ	- - - - -
SPEC.	PICTURE IS STRAIGHT ON THE SCREEN

1. Dissemble the CRT unit.
    1) Remove the top case. (refer to page 2-8 of the service manual volume 1)
    2) Open the H DEF C.B.A. (refer to page 2-8 of the service manual volume 1)
    3) Remove the eye piece unit.
    4) Disconnect the connectors P7004 on the Front C.B.A., P7014 on the V DEF C.B.A., P7009 on the CN C.B.A. and P7013, P7011 on the H DEF C.B.A. so that the CRT unit can be lifted.
    5) Shift the outer lock ring, lock ring spacer and inner lock ring to the cable side as shown in Figure F2.

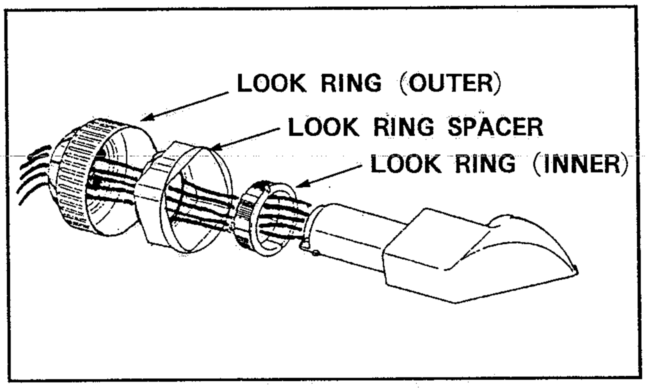


Figure F2

    6) Unscrew the screws (A) and (B) as shown in Figure F3.

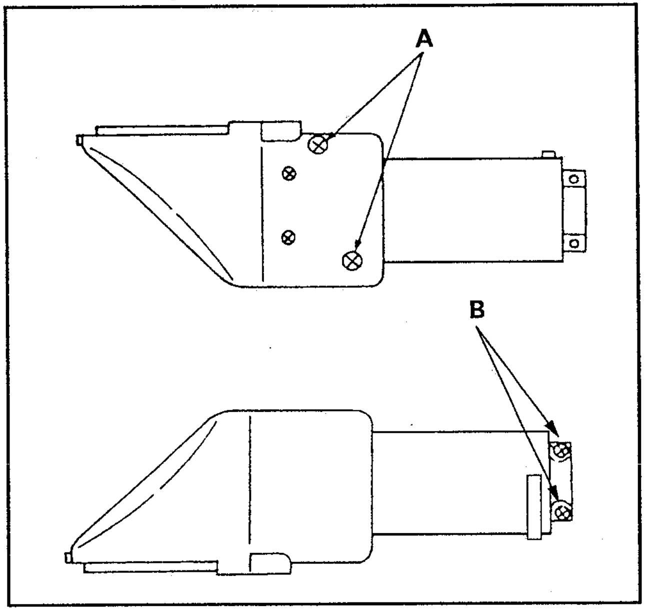


Figure F3.

    7) Push the portion A as shown in Figure F4 so that the CRT case can be removed.

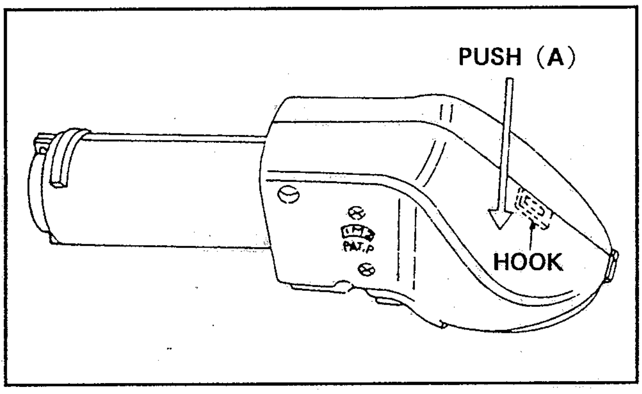


Figure F4

    8) Connect the all connectors which have been disconnected in step 4).

2. Loosen the clamp band screw holding the deflection yoke as shown in Figure F5.
3. Rotate the deflection coil clockwise or counterclockwise so that the picture is straight on the screen as shown in Figure F6.

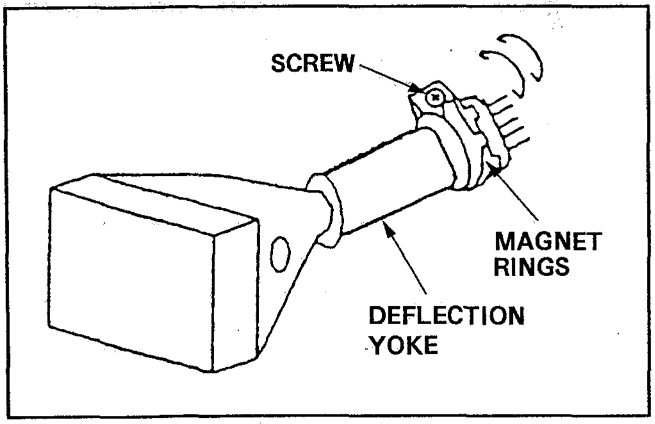


Figure F5.

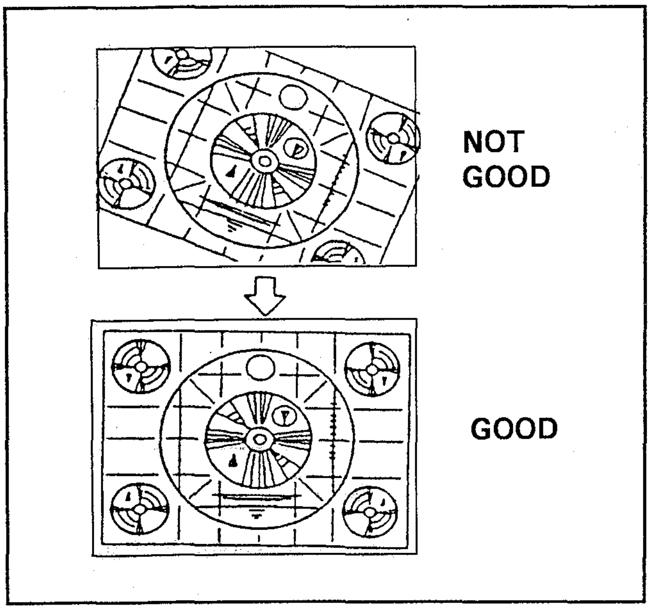


Figure F6.

7-4-7. PICTURE CENTERING ADJ.

BOARD	- - - - -
TP	CRT
ADJ.	CENTERING MAGNETS
TAPE	MONOSCOPE OF ALIGNMENT TAPE
INPUT	FROM VTR SECTION
MODE	PLAY
M.EQ	- - - - -
SPEC.	PICTURE IS IN THE CENTER ON THE SCREEN

1. Disassemble the CRT unit.
(refer to step 1 of 7-4-6. Deflection Yoke Tilt Adj.)
2. Rotate the two centering magnets as shown in Figure F4 to center the picture both vertically horizontally as shown in Figure F8.

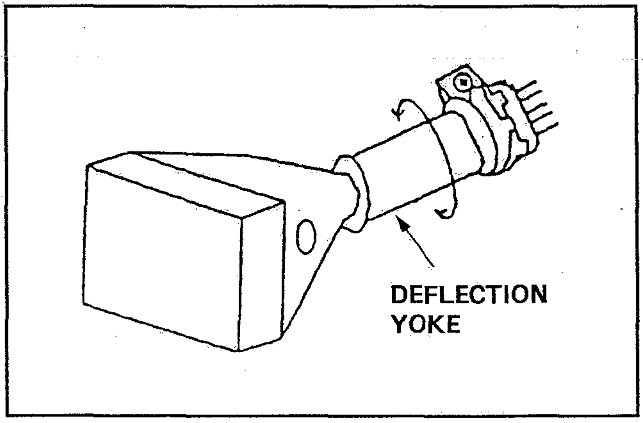


Figure F7.

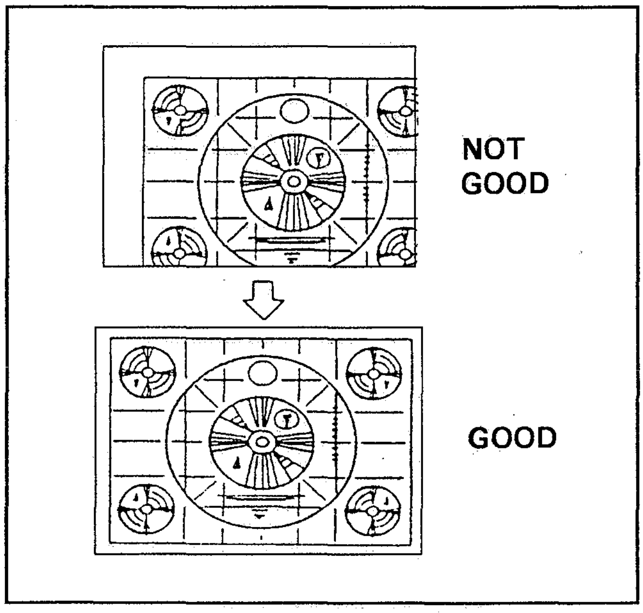


Figure F8.

7-4-8. PICTURE SIZE ADJ.

BOARD	V DEF
TP	SCREEN
ADJ.	VR7004 (V), VR7005 (H)
TAPE	WITHOUT TAPE
INPUT	FROM INTERNAL COLOR BAR
MODE	STOP
M.EQ	- - - - -
SPEC.	H = 0.5mm, V = 0.5mm

1. Set the CAM / BAR switch at the BAR position.
2. Adjust VR7004 (vertical) and VR7005 (horizontal) so that the V width and H width of the picture frame are 0.5mm as shown in Figure F9.

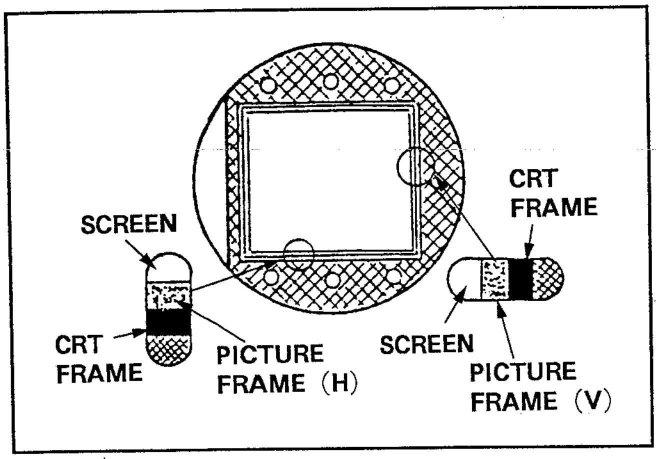


Figure F9.

7-4-9. SUB-BRIGHT ADJ.

BOARD	H DEF
TP	- - - - -
ADJ.	VR7403
TAPE	WITHOUT TAPE
INPUT	FROM CAMERA SECTION
MODE	VTR MODE STOP
M.EQ	OSCILLOSCOPE
SPEC.	RASTER JUST APPEAR

1. Connect the scope to the CAMERA OUT.
2. Place the unit in the CAM (camera) mode and manual iris mode.
3. Aim the camera to a plain white paper and adjust the iris so that the white level is 630mVp-p as shown in Figure F10.
4. Adjust the viewfinder controls as follow.
   - BRIGHT VR : 3 O'clock position
   - CONTRAST VR : Maximum (fully clockwise) position
   - PEAK VR : Minimum (fully counter-clockwise) position
5. Remove the eyepiece from the viewfinder unit.
6. Carefully observe the frame portion of the screen and adjust VR7403 so that the raster is just appeared slightly as shown in Figure F11.

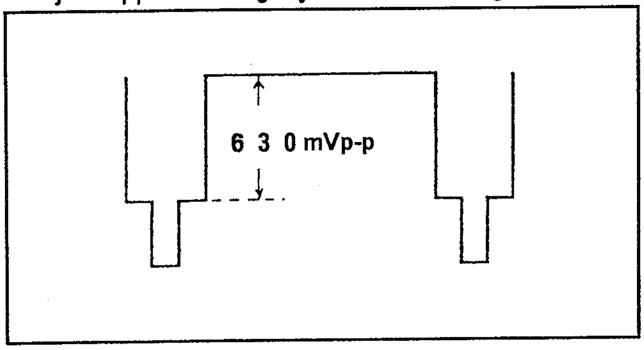


Figure F10.

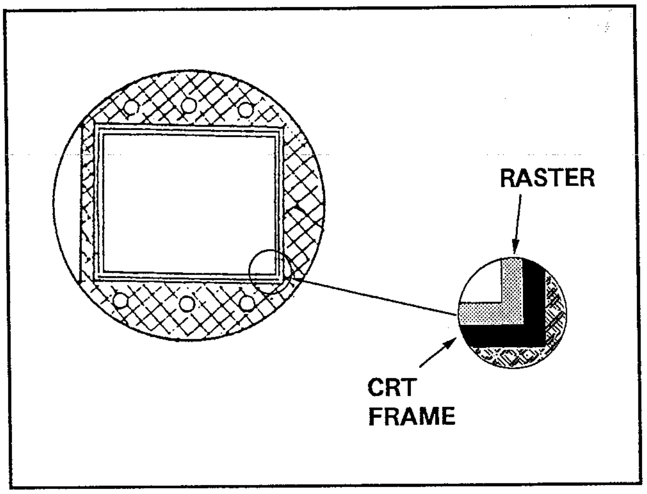


Figure F11.

7-4-10. FOCUS ADJ.

Before this adjustment, make sure that the Sub-Bright adjustment is performed.

BOARD	H DEF
TP	- - - - -
ADJ.	VR7402
TAPE	WITHOUT TAPE
INPUT	FROM CAMERA SECTION
MODE	VTR MODE STOP
M.EQ	- - - - -
SPEC.	BEST FOCUS

1. Connect the monitor TV to the CAMERA OUT.
2. Place the unit in the CAM (camera) mode and manual iris mode.
3. Aim the camera to a resolution chart or boll chart (VFK0580) and adjust the focus ring to the best focus for the monitor TV.
4. Adjust the viewfinder controls as follow.
   - BRIGHT VR : 12 O'clock position
   - CONTRAST VR : 12 O'clock position
   - PEAK VR : Minimum (fully CCW) position.
5. Carefully observe the picture on the viewfinder and adjust VR7402 so the picture is best focus.

Memo

SECTION 8

BLOCK DIAGRAMS

CONTENTS

OVERALL BLOCK DIAGRAM ········BLK-3

POWER BLOCK DIAGRAM ········BLK-4

SYSTEM CONTROL OVER BLOCK DIAGRAM ········BLK-5

SYSTEM CONTROL & SERVO BLOCK DIAGAM ········BLK-5

SUB-SYSTEM CONTROL BLOCK DIAGRAM ········BLK-6

LED BLOCK DIAGRAM ········BLK-6

SYNC GENERATOR BLOCK DIAGRAM ········ELD-7

CCD DRIVE BLOCK DIAGRAM ········BLK-8

APP BLOCK DIAGRAM ········BLK-9

DSP ／ ENCODER BLOCK DIAGRAM ········BLK-10

VIDEO BLOCK DIAGAM ········BLK-11

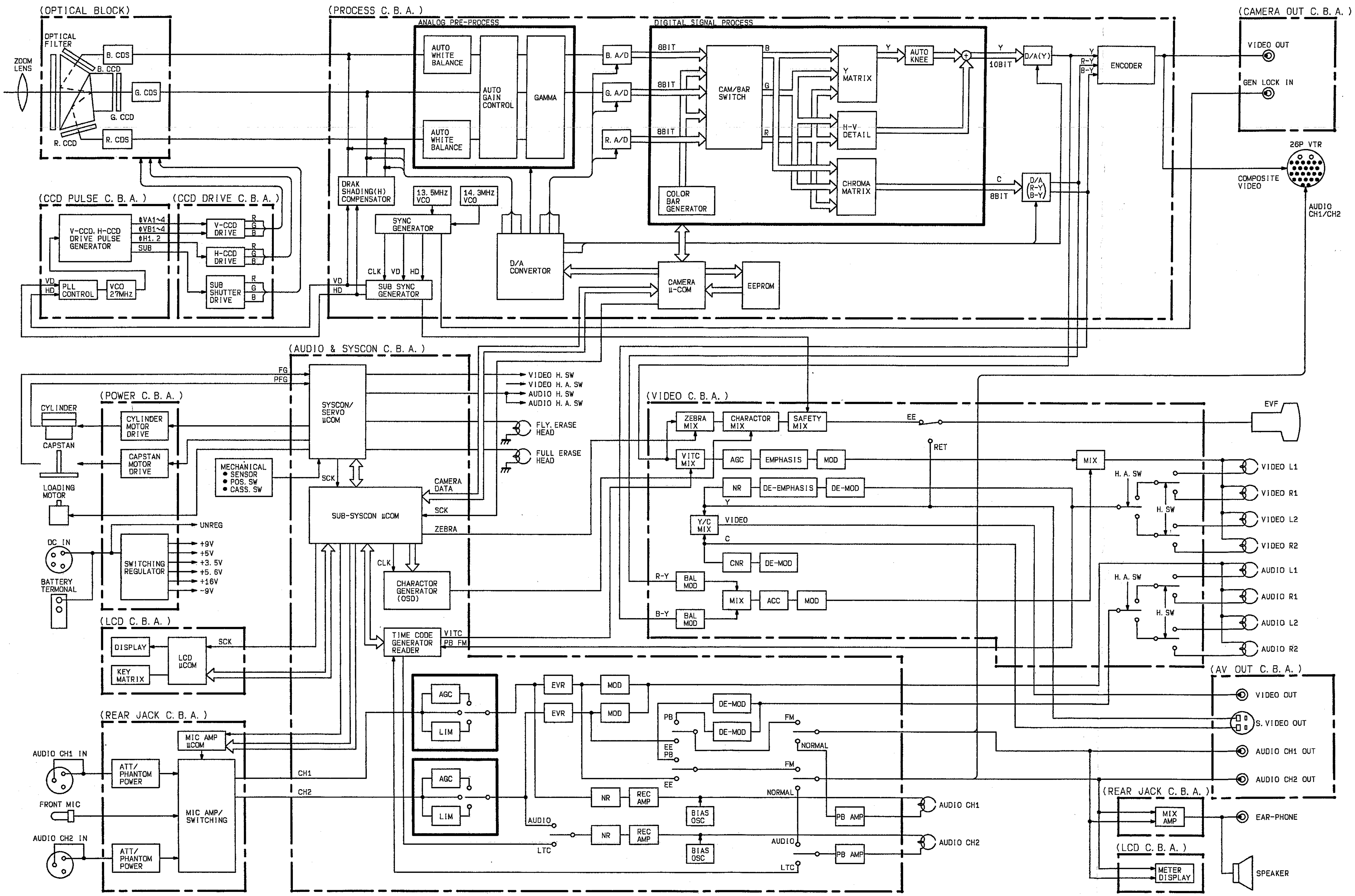
AUDIO BLOCK DIAGRAM ········BLK-12

MIC AMP BLOCK DIAGRAM ········BLK-13

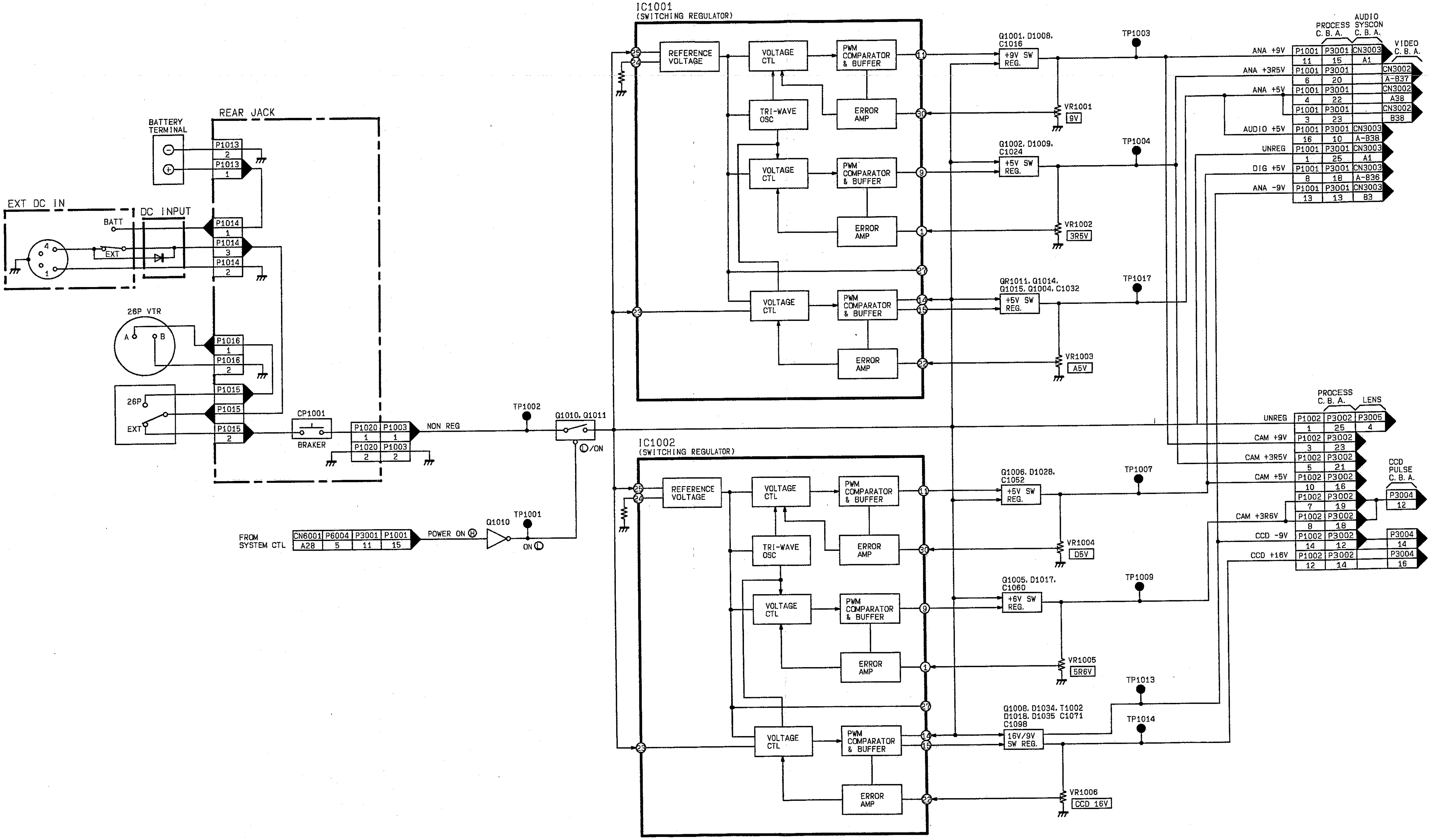
HEAD AMP BLOCK DIAGRAM ········BLK-13

EVF BLOCK DIAGRAM ········BLK-14

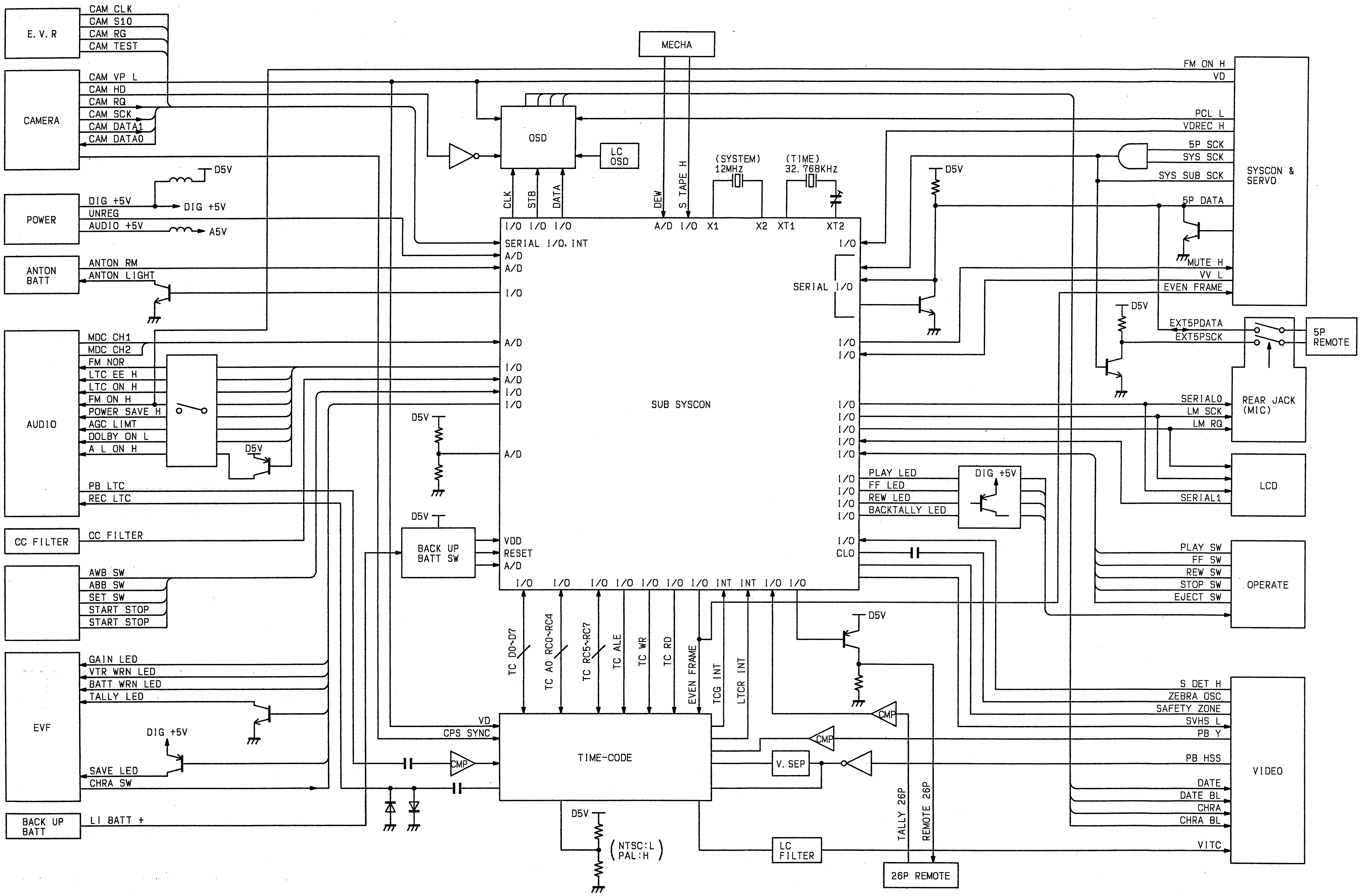
OVERALL BLACK DIAGRAM


(OPTICAL BLOCK)
OPTICAL FILTER
ZOOM LENS
B. CDS
B. CCD
G. CDS
G. CCD
R. CCD
R. CDS
(PROCESS C. B. A.)
ANALOG PRE-PROCESS
AUTO WHITE BALANCE
AUTO GAIN CONTROL
GAMMA
AUTO WHITE BALANCE
DIGITAL SIGNAL PROCESS
B. A/D
G. A/D
R. A/D
8BIT
8BIT
8BIT
B
G
R
CAM/BAR SWITCH
Y MATRIX
H-V DETAIL
CHROMA MATRIX
COLOR BAR GENERATOR
Y
AUTO KNEE
Y
10BIT
D/A(Y)
C
8BIT
D/A (R-Y) (B-Y)
R-Y
B-Y
Y
ENCODER
(CAMERA OUT C. B. A.)
VIDEO OUT
GEN LOCK IN
26P VTR
COMPOSITE VIDEO
AUDIO CH1/CH2
DRAK SHADING(H) COMPENSATOR
13. 5MHz VCO
14. 3MHz VCO
SYNC GENERATOR
CLK
VD
HD
SUB SYNC GENERATOR
VD
HD
D/A CONVERTOR
CAMERA μ-COM
EEPROM
(CCD PULSE C. B. A.)
V-CCD, H-CCD DRIVE PULSE GENERATOR
φVA1~4
φVB1~4
φH1, 2
SUB
(CCD DRIVE C. B. A.)
V-CCD DRIVE
H-CCD DRIVE
SUB SHUTTER DRIVE
R
G
B
VD
HD
PLL CONTROL
VCO 27MHz
(AUDIO & SYSCON C. B. A.)
FG
PFG
SYSCON/ SERVO μCOM
VIDEO H. SW
VIDEO H. A. SW
AUDIO H. SW
AUDIO H. A. SW
FLY. ERASE HEAD
FULL ERASE HEAD
MECHANICAL
• SENSOR
• POS. SW
• CASS. SW
SCK
CAMERA DATA
SCK
ZEBRA
SUB-SYSCON μCOM
CLK
CHARACTOR GENERATOR (OSD)
TIME CODE GENERATOR READER
VITC
PB FM
(POWER C. B. A.)
CYLINDER
CYLINDER MOTOR DRIVE
CAPSTAN
CAPSTAN MOTOR DRIVE
LOADING MOTOR
UNREG
DC IN
SWITCHING REGULATOR
+9V
+5V
+3. 5V
+5. 6V
+16V
-9V
BATTERY TERMONAL
(LCD C. B. A.)
DISPLAY
LCD μCOM
SCK
KEY MATRIX
(REAR JACK C. B. A.)
MIC AMP μCOM
AUDIO CH1 IN
ATT/ PHANTOM POWER
FRONT MIC
MIC AMP/ SWITCHING
AUDIO CH2 IN
ATT/ PHANTOM POWER
CH1
CH2
(VIDEO C. B. A.)
ZEBRA MIX
CHARACTOR MIX
SAFETY MIX
EE
RET
EVF
VITC MIX
AGC
EMPHASIS
MOD
MIX
NR
DE-EMPHASIS
DE-MOD
Y
Y/C MIX
VIDEO
C
CNR
DE-MOD
R-Y
BAL MOD
MIX
ACC
MOD
B-Y
BAL MOD
H. A. SW
H. SW
VIDEO L1
VIDEO R1
VIDEO L2
VIDEO R2
H. A. SW
H. SW
AUDIO L1
AUDIO R1
AUDIO L2
AUDIO R2
(AV OUT C. B. A.)
VIDEO OUT
S. VIDEO OUT
AUDIO CH1 OUT
AUDIO CH2 OUT
AGC
LIM
AGC
LIM
EVR
MOD
EVR
MOD
PB
DE-MOD
DE-MOD
FM
EE
PB
NORMAL
FM
EE
NORMAL
NR
REC AMP
BIAS OSC
AUDIO
LTC
NR
REC AMP
BIAS OSC
AUDIO
LTC
PB AMP
AUDIO CH1
PB AMP
AUDIO CH2
(REAR JACK C. B. A.)
MIX AMP
EAR-PHONE
(LCD C. B. A.)
METER DISPLAY
SPEAKER

POWER BLACK DIAGRAM


IC1001
(SWITCHING REGULATOR)
REFERENCE VOLTAGE
VOLTAGE CTL
PWM COMPARATOR & BUFFER
TRI-WAVE OSC
ERROR AMP
IC1002
(SWITCHING REGULATOR)
REAR JACK
BATTERY TERMINAL
EXT DC IN
DC INPUT
BATT
EXT
26P VTR
26P
A
B
P1013
P1014
P1016
P1015
CP1001
BRAKER
P1020
P1003
NON REG
TP1002
Q1010, Q1011
Ⓛ/ON
FROM SYSTEM CTL
CN6001 P6004 P3001 P1001
A28 5 11 15
POWER ON Ⓗ
Q1010
TP1001
ON Ⓛ
Q1001, D1008, C1016
+9V SW REG.
TP1003
VR1001
9V
Q1002, D1009, C1024
+5V SW REG.
TP1004
VR1002
3R5V
QR1011, Q1014, Q1015, Q1004, C1032
+5V SW REG.
TP1017
VR1003
A5V
Q1006, D1028, C1052
+5V SW REG.
TP1007
VR1004
D5V
Q1005, D1017, C1060
+6V SW REG.
TP1009
VR1005
5R6V
TP1013
Q1008, D1034, T1002
D1018, D1035 C1071
C1098
16V/9V SW REG.
TP1014
VR1006
CCD 16V
PROCESS C. B. A.
AUDIO SYSCON C. B. A.
VIDEO C. B. A.
ANA +9V
ANA +3R5V
ANA +5V
AUDIO +5V
UNREG
DIG +5V
ANA -9V
P1001 P3001 CN3003 CN3002
A1 A-B37 A38 B38 A-B38 A1 A-B36 B3
LENS
UNREG
CAM +9V
CAM +3R5V
CAM +5V
CAM +3R6V
CCD -9V
CCD +16V
P1002 P3002 P3005
CCD PULSE C. B. A.
P3004

SYSTEM CONTROL OVER BLACK DIAGRAM

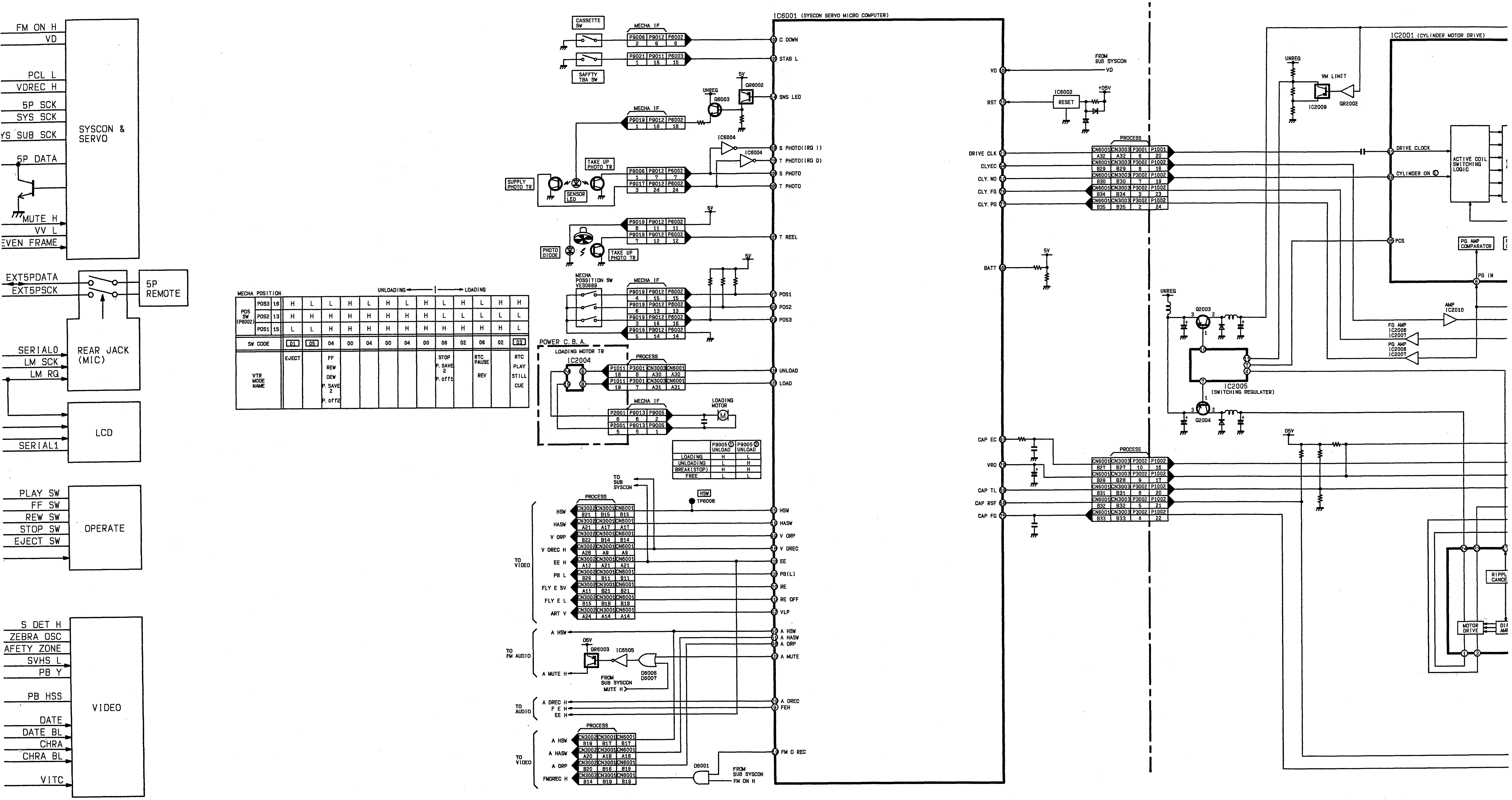

E. V. R
CAM CLK
CAM S10
CAM RG
CAM TEST
CAMERA
CAM VP L
CAM HD
CAM RQ
CAM SCK
CAM DATA1
CAM DATA0
POWER
DIG +5V
UNREG
AUDIO +5V
D5V
DIG +5V
A5V
ANTON BATT
ANTON RM
ANTON LIGHT
AUDIO
MDC CH1
MDC CH2
FM NOR
LTC EE H
LTC ON H
FM ON H
POWER SAVE H
AGC LIMT
DOLBY ON L
A L ON H
D5V
PB LTC
REC LTC
CC FILTER
CC FILTER
AWB SW
ABB SW
SET SW
START STOP
START STOP
EVF
GAIN LED
VTR WRN LED
BATT WRN LED
TALLY LED
DIG +5V
SAVE LED
CHRA SW
BACK UP BATT
LI BATT +
MECHA
OSD
LC OSD
CLK
STB
DATA
DEW
S TAPE H
(SYSTEM) 12MHz
(TIME) 32.768KHz
D5V
SUB SYSCON
I/O I/O I/O
A/D I/O X1
X2 XT1
XT2
SERIAL I/O, INT
A/D
A/D
I/O
A/D
I/O
A/D
I/O
I/O
A/D
VDD
RESET
A/D
I/O
SERIAL I/O
I/O
I/O
I/O
I/O
I/O
I/O
I/O
I/O
I/O
I/O
I/O
I/O
I/O
CLO
I/O I/O I/O I/O I/O I/O I/O INT INT I/O I/O
D5V
D5V
BACK UP BATT SW
TC D0~D7
TC A0 RC0~RC4
TC RC5~RC7
TC ALE
TC WR
TC RD
EVEN FRAME
TCG INT
LTCR INT
VD
CPS SYNC
TIME-CODE
CMP
D5V
(NTSC:L PAL:H)
LC FILTER
V. SEP
CMP
CMP
D5V
TALLY 26P
REMOTE 26P
26P REMOTE
FM ON H
VD
PCL L
VDREC H
5P SCK
SYS SCK
SYS SUB SCK
5P DATA
MUTE H
VV L
EVEN FRAME
SYSCON & SERVO
D5V
EXT5PDATA
EXT5PSCK
5P REMOTE
REAR JACK (MIC)
SERIAL0
LM SCK
LM RQ
LCD
SERIAL1
PLAY LED
FF LED
REW LED
BACKTALLY LED
DIG +5V
OPERATE
PLAY SW
FF SW
REW SW
STOP SW
EJECT SW
VIDEO
S DET H
ZEBRA OSC
SAFETY ZONE
SVHS L
PB Y
PB HSS
DATE
DATE BL
CHRA
CHRA BL
VITC

SYSTEM

MECHA POSITION

POS SW (P6002)	POS3	16	H	L	L
	POS2	13	H	H	H
	POS1	15	L	L	H
SW CODE			01	05	04
VTR MODE NAME			EJECT		FF RE DE P. SA 2 P. of

SYSTEM CONTROL & SERVO BLOCK DIAGRAM


FM ON H
VD
PCL L
VDREC H
5P SCK
SYS SCK
YS SUB SCK
5P DATA
MUTE H
VV L
EVEN FRAME
SYSCON & SERVO
EXT5PDATA
EXT5PSCK
5P REMOTE
SERIAL0
LM SCK
LM RQ
REAR JACK (MIC)
LCD
SERIAL1
PLAY SW
FF SW
REW SW
STOP SW
EJECT SW
OPERATE
S DET H
ZEBRA OSC
AFETY ZONE
SVHS L
PB Y
PB HSS
DATE
DATE BL
CHRA
CHRA BL
VITC
VIDEO
CASSETTE SW
SAFFTY TBA SW
MECHA IF
UNREG
Q6003
5V
QR6002
IC6004
TAKE UP PHOTO TR
SUPPLY PHOTO TR
SENSOR LED
PHOTO DIODE
MECHA POSSITION SW VES0689
POWER C. B. A.
LOADING MOTOR TR
IC2004
PROCESS
LOADING MOTOR
HSW
TP6006
TO SUB SYSCON
TO VIDEO
TO FM AUDIO
TO AUDIO
D5V
QR6003
IC6505
D6006
D6007
FROM SUB SYSCON MUTE H
D6001
FROM SUB SYSCON FM ON H
IC6001 (SYSCON SERVO MICRO COMPUTER)
C DOWN
STAB L
SNS LED
S PHOTO(IRQ 1)
T PHOTO(IRQ 0)
S PHOTO
T PHOTO
T REEL
POS1
POS2
POS3
UNLOAD
LOAD
HSW
HASW
V ORP
V DREC
EE
PB(L)
RE
RE OFF
VLP
A HSW
A HASW
A ORP
A MUTE
A DREC
FEH
FM D REC
VD
RST
DRIVE CLK
CLYEC
CLY. NO
CLY. FG
CLY. PG
BATT
CAP EC
VRO
CAP TL
CAP RSF
CAP FG
FROM SUB SYSCON
IC6002
RESET
+D5V
IC2001 (CYLINDER MOTOR DRIVE)
VM LIMIT
IC2009
QR2002
DRIVE CLOCK
CYLINDER ON
ACTIVE COIL SWITCHING LOGIC
PCS
PG AMP COMPARATOR
PG IN
AMP IC2010
FG AMP IC2006 IC2007
PG AMP IC2006 IC2007
Q2003
Q2004
IC2005 (SWITCHING REGULATER)
RIPPL CANCE
MOTOR DRIVE

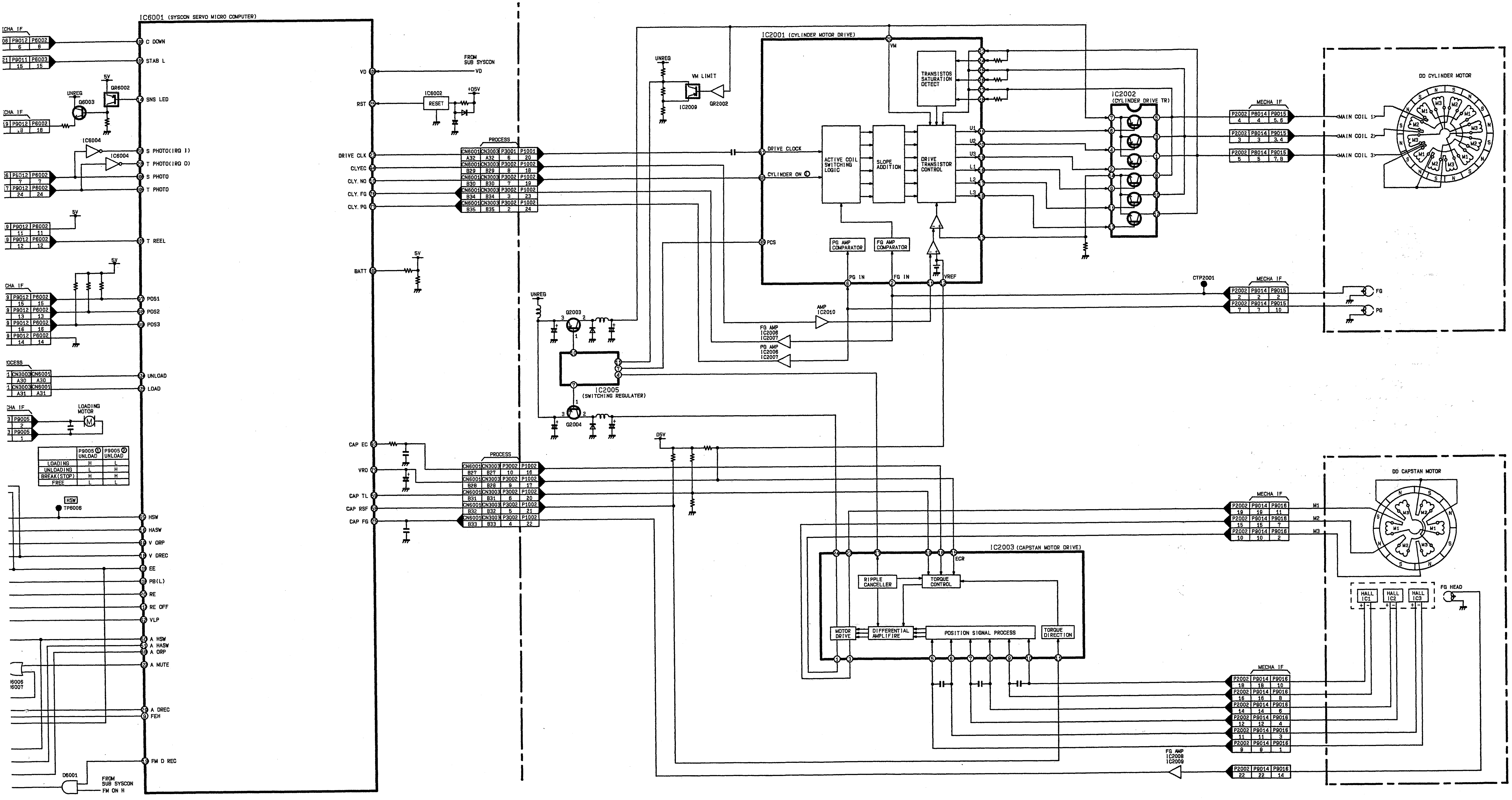
MECHA POSITION

UNLOADING ← | → LOADING

POS SW (P6002)	POS3	16	H	L	L	H	L	H	L	H	L	H	L	H	H
	POS2	13	H	H	H	H	H	H	H	H	L	L	L	L	L
	POS1	15	L	L	H	H	H	H	H	H	H	H	H	H	L
SW CODE			01	05	04	00	04	00	04	00	06	02	06	02	03
VTR MODE NAME			EJECT		FF REW DEW P. SAVE 2 P. off2						STOP P. SAVE 2 P. off1		RTC PAUSE REV		RTC PLAY STILL CUE

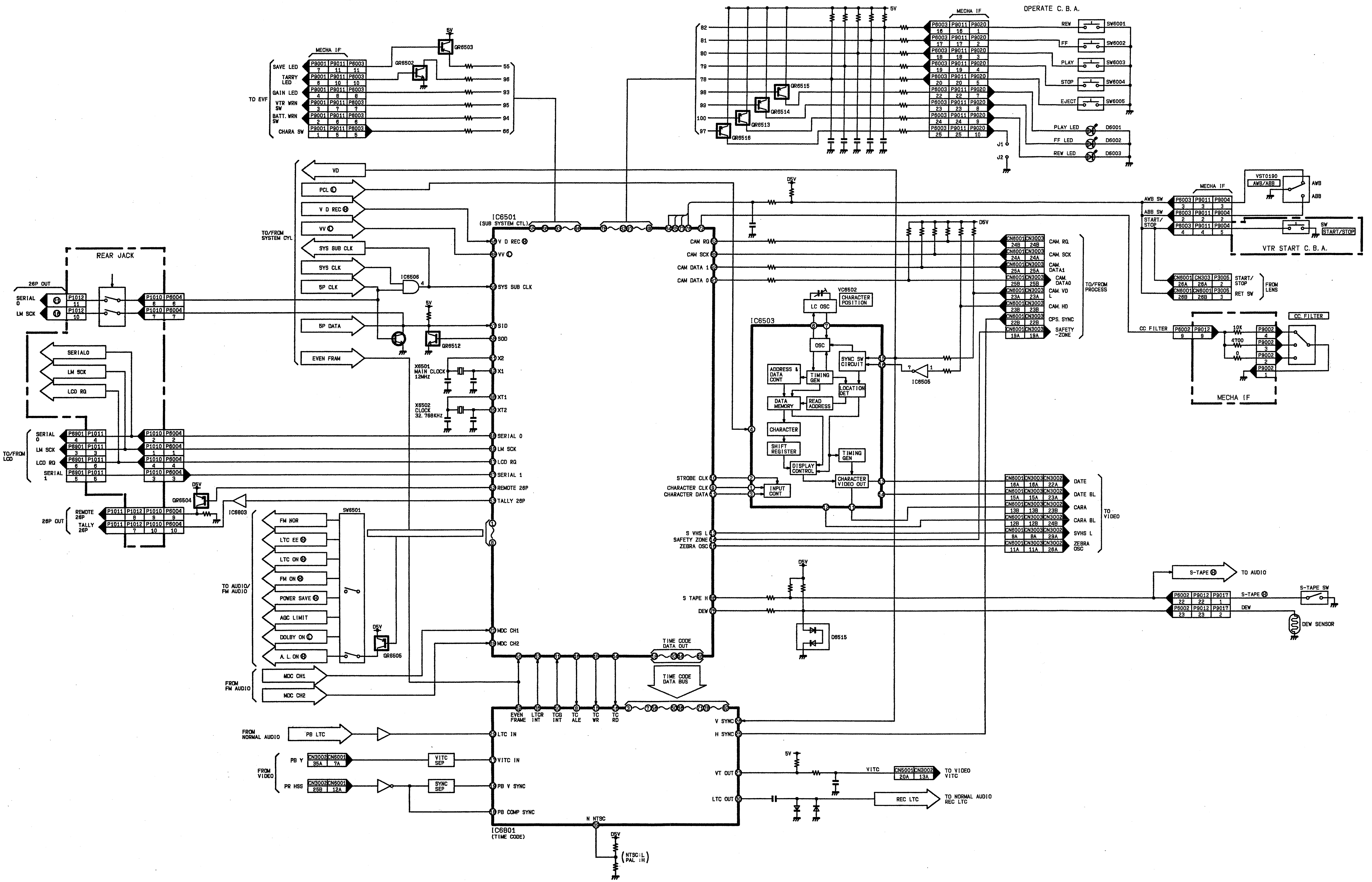
	P9005 ① UNLOAD	P9005 ② UNLOAD
LOADING	H	L
UNLOADING	L	H
BREAK(STOP)	H	H
FREE	L	L

AGRAM

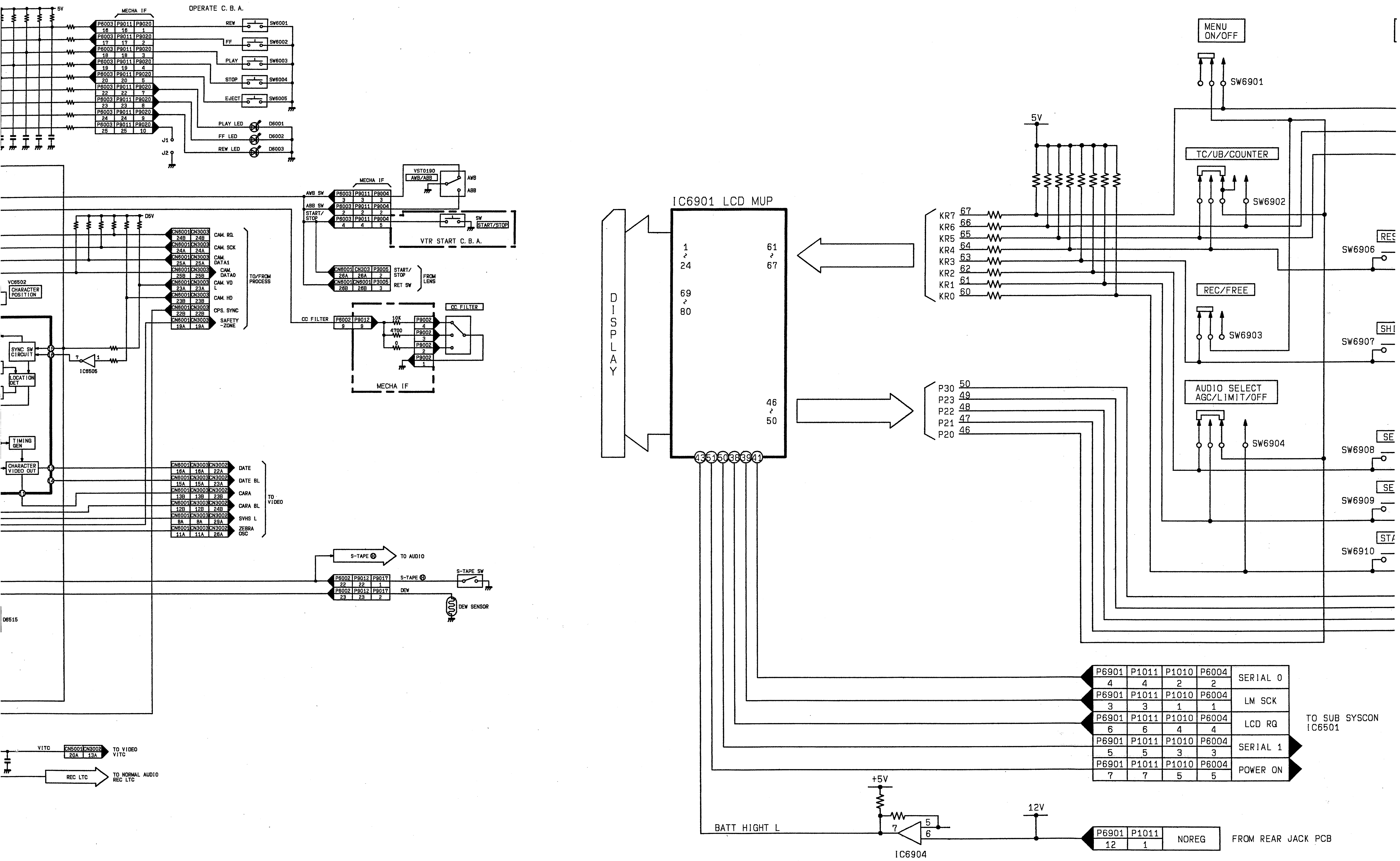

IC6001 (SYSCON SERVO MICRO COMPUTER)
C DOWN
STAB L
SNS LED
S PHOTO(IRQ 1)
T PHOTO(IRQ 0)
S PHOTO
T PHOTO
T REEL
POS1
POS2
POS3
UNLOAD
LOAD
HSW
HASW
V ORP
V DREC
EE
PB(L)
RE
RE OFF
VLP
A HSW
A HASW
A ORP
A MUTE
A DREC
FEH
FM D REC
VD
RST
DRIVE CLK
CLYEC
CLY. NO
CLY. FG
CLY. PG
BATT
CAP EC
VRO
CAP TL
CAP RSF
CAP FG
FROM SUB SYSCON
IC6002
RESET
+D5V
QR6002
Q6003
IC6004
UNREG
5V
LOADING MOTOR
TP6006
D6001
FROM SUB SYSCON FM ON H
PROCESS
MECHA IF
IC2001 (CYLINDER MOTOR DRIVE)
VM
TRANSISTOS SATURATION DETECT
DRIVE CLOCK
CYLINDER ON
ACTIVE COIL SWITCHING LOGIC
SLOPE ADDITION
DRIVE TRANSISTOR CONTROL
U1
U2
U3
L1
L2
L3
PCS
PG AMP COMPARATOR
FG AMP COMPARATOR
PG IN
FG IN
VREF
VM LIMIT
IC2009
QR2002
IC2002 (CYLINDER DRIVE TR)
DD CYLINDER MOTOR
MAIN COIL 1
MAIN COIL 2
MAIN COIL 3
CTP2001
FG
PG
AMP IC2010
FG AMP IC2006 IC2007
PG AMP IC2006 IC2007
Q2003
Q2004
IC2005 (SWITCHING REGULATER)
D5V
IC2003 (CAPSTAN MOTOR DRIVE)
ECR
RIPPLE CANCELLER
TORQUE CONTROL
MOTOR DRIVE
DIFFERENTIAL AMPLIFIRE
POSITION SIGNAL PROCESS
TORQUE DIRECTION
DD CAPSTAN MOTOR
M1
M2
M3
HALL IC1
HALL IC2
HALL IC3
FG HEAD
FG AMP IC2008 IC2009

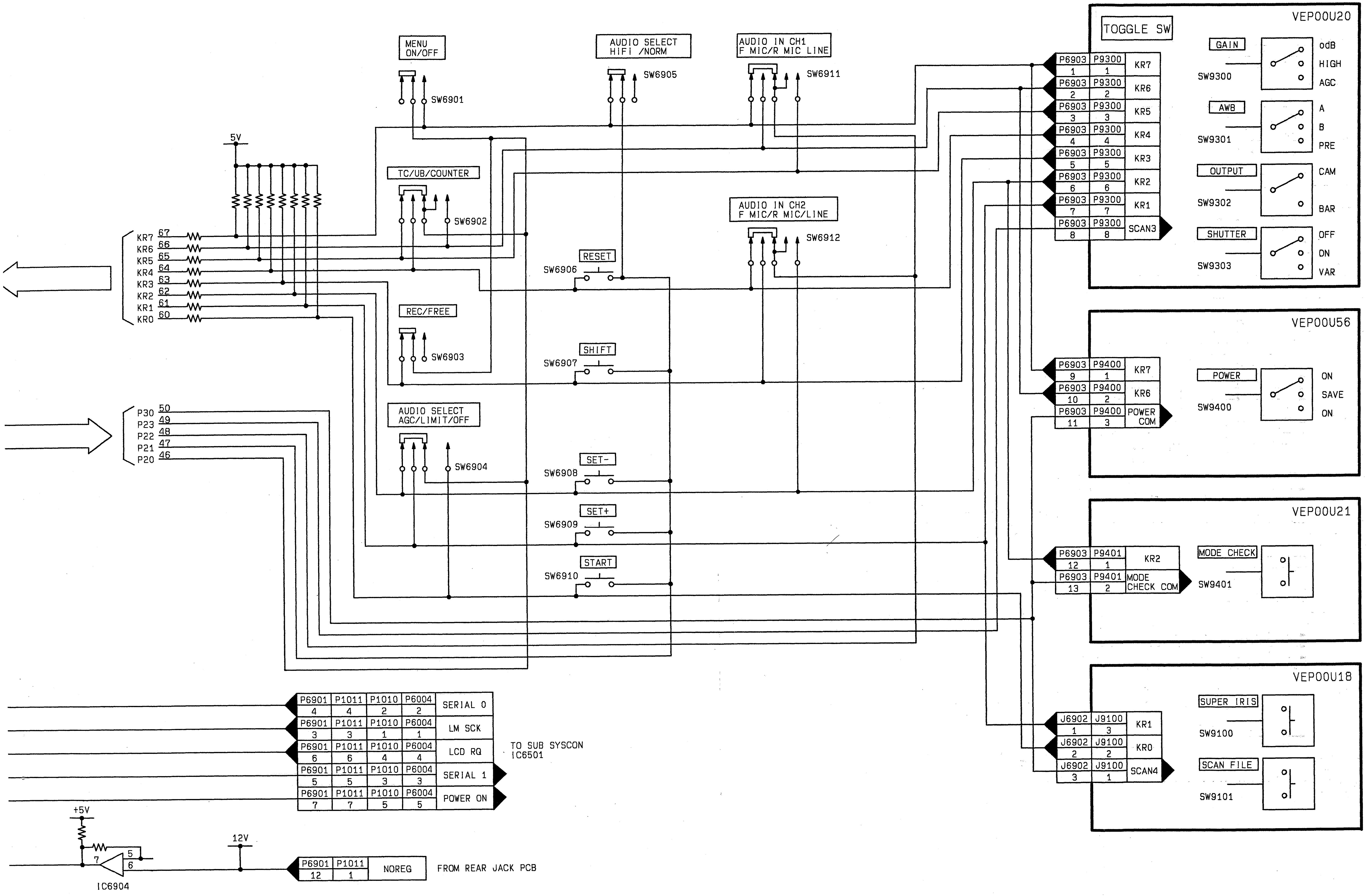
	P9005 ① UNLOAD	P9005 ② UNLOAD
LOADING	H	L
UNLOADING	L	H
BREAK(STOP)	H	H
FREE	L	L

SUB-SYSTEM CONTROL BLOCK DIAGRAM

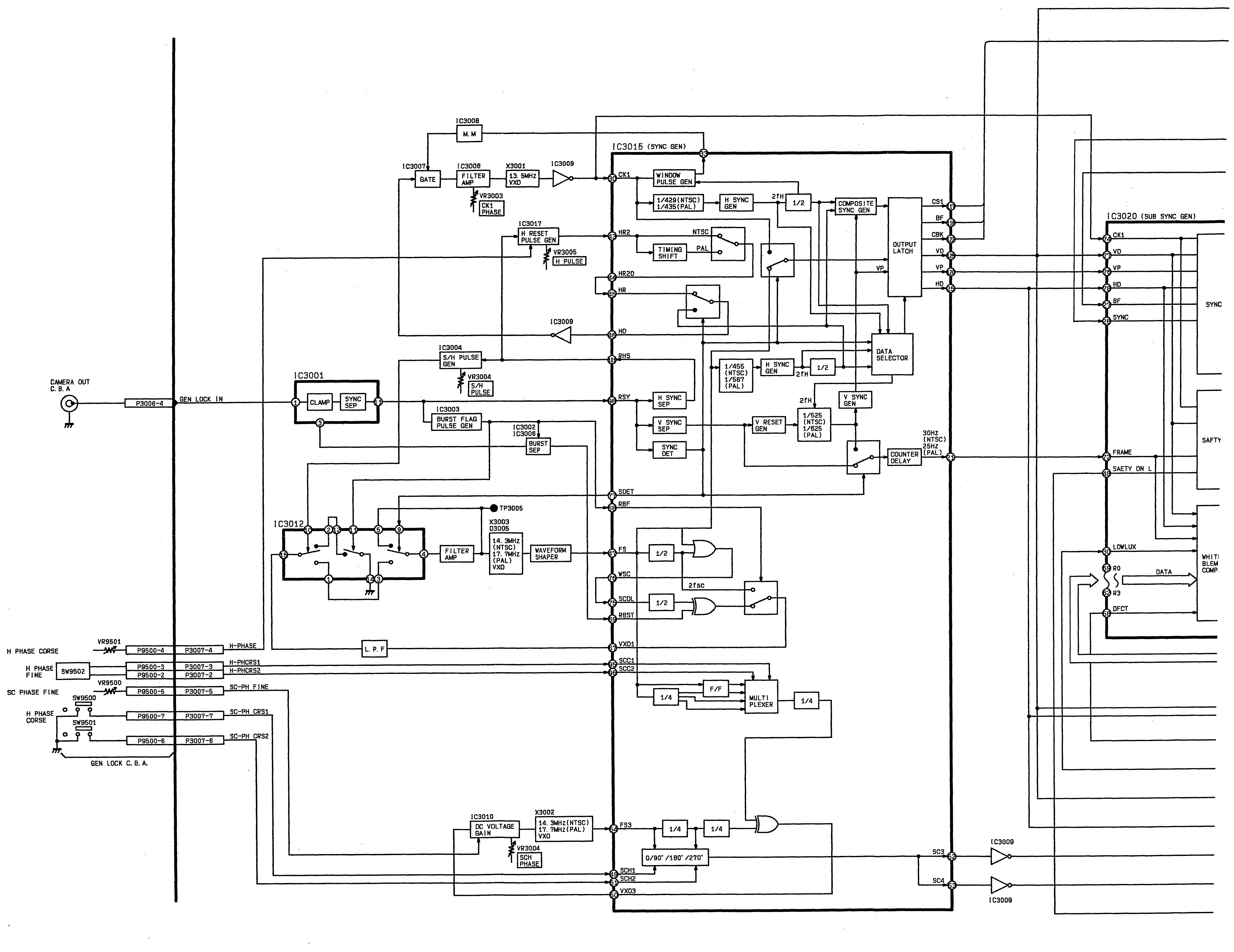

MECHA IF
SAVE LED
TARRY LED
GAIN LED
VTR WRN SW
BATT. WRN SW
CHARA SW
TO EVF
QR6502
QR6503
5V
OPERATE C. B. A.
REW
FF
PLAY
STOP
EJECT
SW6001
SW6002
SW6003
SW6004
SW6005
PLAY LED
FF LED
REW LED
D6001
D6002
D6003
QR6515
QR6514
QR6513
QR6516
J1
J2
D5V
VD
PCL
V D REC
VV
SYS SUB CLK
SYS CLK
5P CLK
5P DATA
EVEN FRAM
TO/FROM SYSTEM CYL
IC6506
QR6512
IC6501 (SUB SYSTEM CTL)
V D REC
VV
SYS SUB CLK
SID
SOD
X2
X1
XT1
XT2
X6501 MAIN CLOCK 12MHZ
X6502 CLOCK 32.768KHZ
SERIAL 0
LM SCK
LCD RQ
SERIAL 1
REMOTE 26P
TALLY 26P
MDC CH1
MDC CH2
REAR JACK
26P OUT
SERIAL 0
LM SCK
SERIAL0
LCD RQ
TO/FROM LCD
SERIAL 1
REMOTE 26P
TALLY 26P
QR6504
IC6603
CAM RQ
CAM SCK
CAM DATA 1
CAM DATA 0
STROBE CLK
CHARACTER CLK
CHARACTER DATA
S VHS L
SAFETY ZONE
ZEBRA OSC
S TAPE H
DEW
TIME CODE DATA OUT
TIME CODE DATA BUS
CAM. RQ
CAM. SCK
CAM. DATA1
CAM. DATA0
CAM. VD
CAM. HD
CPS. SYNC
SAFETY -ZONE
TO/FROM PROCESS
VC6502 CHARACTER POSITION
LC OSC
IC6503
OSC
SYNC SW CIRCUIT
ADDRESS & DATA CONT
TIMING GEN
LOCATION DET
DATA MEMORY
READ ADDRESS
CHARACTER
SHIFT REGISTER
TIMING GEN
DISPLAY CONTROL
INPUT CONT
CHARACTER VIDEO OUT
IC6505
DATE
DATE BL
CARA
CARA BL
SVHS L
ZEBRA OSC
TO VIDEO
VST0190 AWB/ABB
AWB
ABB
AWB SW
ABB SW
START/ STOP
SW START/STOP
VTR START C. B. A.
START/ STOP
RET SW
FROM LENS
CC FILTER
CC. FILTER
10K
4700
0
MECHA IF
S-TAPE H
TO AUDIO
S-TAPE H
S-TAPE SW
DEW
DEW SENSOR
D6515
FM NOR
LTC EE H
LTC ON H
FM ON H
POWER SAVE H
AGC LIMIT
DOLBY ON L
A. L. ON H
SW6501
QR6505
TO AUDIO/ FM AUDIO
MDC CH1
MDC CH2
FROM FM AUDIO
EVEN FRAME
LTCR INT
TCG INT
TC ALE
TC WR
TC RD
V SYNC
H SYNC
FROM NORMAL AUDIO
PB LTC
LTC IN
PB Y
PR HSS
FROM VIDEO
VITC SEP
SYNC SEP
VITC IN
PB V SYNC
PB COMP SYNC
VT OUT
LTC OUT
VITC
TO VIDEO VITC
REC LTC
TO NORMAL AUDIO REC LTC
N NTSC
IC6801 (TIME CODE)
NTSC:L PAL :H

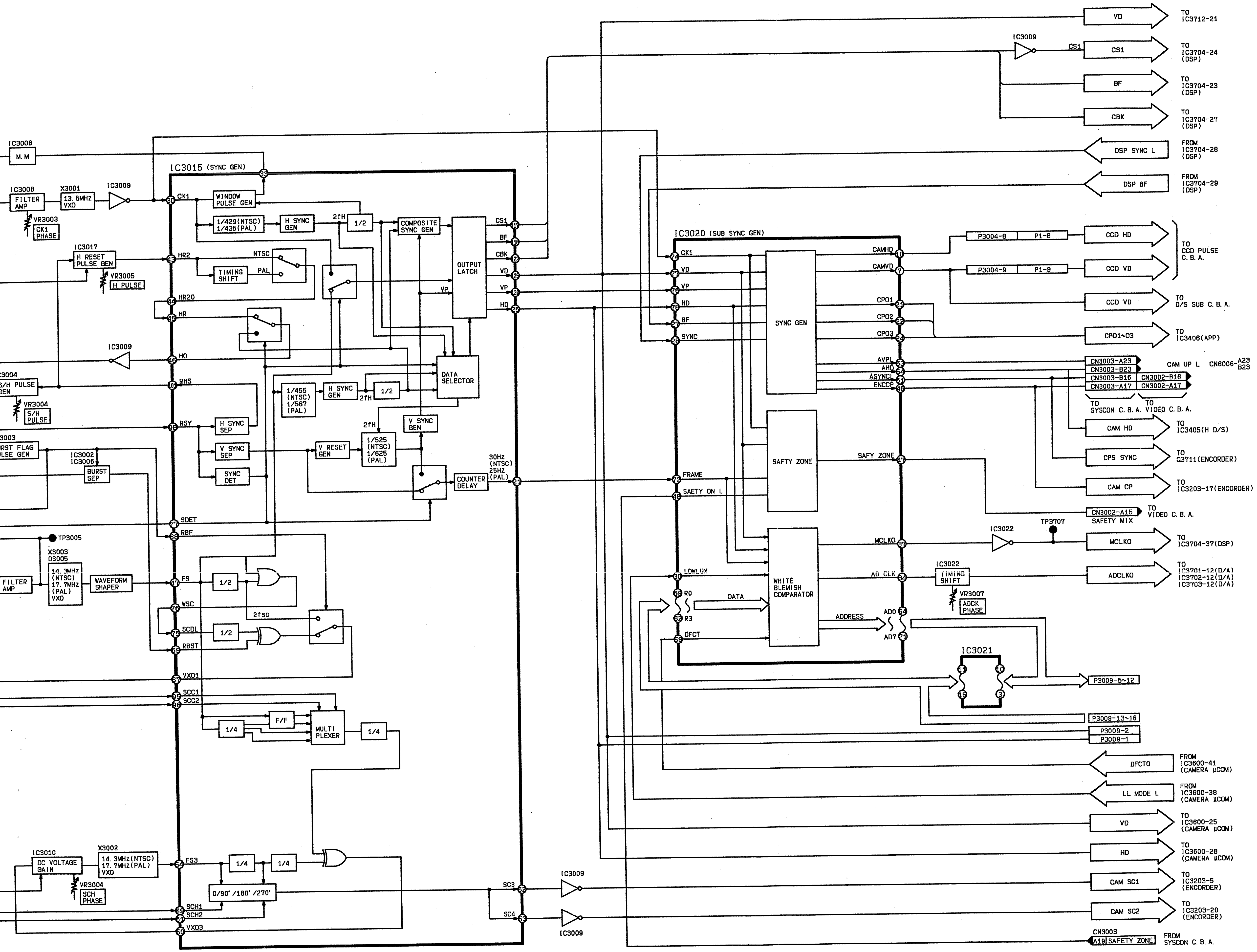
LED BLOCK DIAGRAM


5V
MECHA IF
OPERATE C. B. A.
P6003 16 P9011 16 P9020 1
P6003 17 P9011 17 P9020 2
P6003 18 P9011 18 P9020 3
P6003 19 P9011 19 P9020 4
P6003 20 P9011 20 P9020 5
P6003 22 P9011 22 P9020 7
P6003 23 P9011 23 P9020 8
P6003 24 P9011 24 P9020 9
P6003 25 P9011 25 P9020 10
REW SW6001
FF SW6002
PLAY SW6003
STOP SW6004
EJECT SW6005
PLAY LED D6001
FF LED D6002
REW LED D6003
J1
J2
VST0190
AWB/ABB
AWB
ABB
MECHA IF
AWB SW P6003 3 P9011 3 P9004 3
ABB SW P6003 2 P9011 2 P9004 2
START/STOP P6003 4 P9011 4 P9004 5
SW START/STOP
VTR START C. B. A.
D5V
CN6001 24B CN3003 24B CAM. RQ
CN6001 24A CN3003 24A CAM. SCK
CN6001 25A CN3003 25A CAM. DATA1
CN6001 25B CN3003 25B CAM. DATA0
CN6001 23A CN3003 23A CAM. VD L
CN6001 23B CN3003 23B CAM. HD
CN6001 22B CN3003 22B CPS. SYNC
CN6001 19A CN3003 19A SAFETY -ZONE
TO/FROM PROCESS
CN6001 26A CN303 26A P3005 2 START/STOP
CN6001 26B CN6001 26B P3005 3 RET SW
FROM LENS
VC6502
CHARACTER POSITION
SYNC SW CIRCUIT
LOCATION DET
IC6505
15
16
7
1
CC FILTER P6002 9 P9012 9
10K
4700
0
P9002 4
P9002 3
P9002 2
P9002 1
CC. FILTER
MECHA IF
TIMING GEN
CHARACTER VIDEO OUT
13
14
11
CN6001 16A CN3003 16A CN3002 22A DATE
CN6001 15A CN3003 15A CN3002 23A DATE BL
CN6001 13B CN3003 13B CN3002 23B CARA
CN6001 12B CN3003 12B CN3002 24B CARA BL
CN6001 8A CN3003 8A CN3002 29A SVHS L
CN6001 11A CN3003 11A CN3002 26A ZEBRA OSC
TO VIDEO
S-TAPE Ⓗ
TO AUDIO
P6002 22 P9012 22 P9017 1 S-TAPE Ⓗ
P6002 23 P9012 23 P9017 2 DEW
S-TAPE SW
DEW SENSOR
D6515
VITC
CN5001 20A CN3002 13A
TO VIDEO VITC
REC LTC
TO NORMAL AUDIO REC LTC
DISPLAY
IC6901 LCD MUP
1 ~ 24
69 ~ 80
61 ~ 67
46 ~ 50
43 51 50 38 39 41
5V
KR7 67
KR6 66
KR5 65
KR4 64
KR3 63
KR2 62
KR1 61
KR0 60
P30 50
P23 49
P22 48
P21 47
P20 46
MENU ON/OFF
SW6901
TC/UB/COUNTER
SW6902
REC/FREE
SW6903
AUDIO SELECT AGC/LIMIT/OFF
SW6904
RES
SW6906
SHI
SW6907
SE
SW6908
SE
SW6909
STA
SW6910
P6901 4 P1011 4 P1010 2 P6004 2 SERIAL 0
P6901 3 P1011 3 P1010 1 P6004 1 LM SCK
P6901 6 P1011 6 P1010 4 P6004 4 LCD RQ
P6901 5 P1011 5 P1010 3 P6004 3 SERIAL 1
P6901 7 P1011 7 P1010 5 P6004 5 POWER ON
TO SUB SYSCON IC6501
+5V
BATT HIGHT L
7
5
6
IC6904
12V
P6901 12 P1011 1 NOREG
FROM REAR JACK PCB

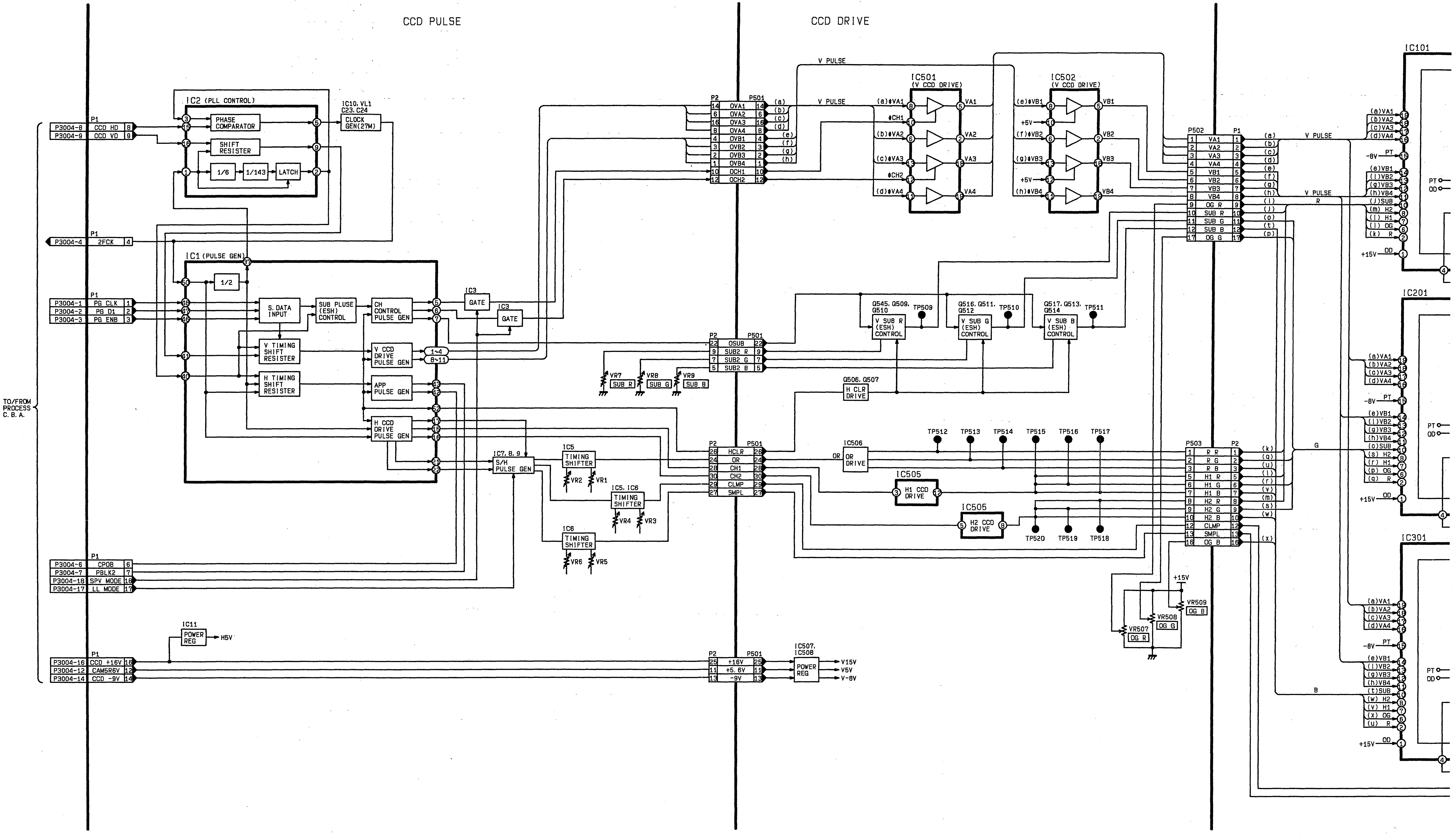

MENU ON/OFF
SW6901
AUDIO SELECT HIFI /NORM
SW6905
AUDIO IN CH1 F MIC/R MIC LINE
SW6911
TC/UB/COUNTER
SW6902
AUDIO IN CH2 F MIC/R MIC/LINE
SW6912
5V
KR7 67
KR6 66
KR5 65
KR4 64
KR3 63
KR2 62
KR1 61
KR0 60
RESET
SW6906
REC/FREE
SW6903
SHIFT
SW6907
P30 50
P23 49
P22 48
P21 47
P20 46
AUDIO SELECT AGC/LIMIT/OFF
SW6904
SET-
SW6908
SET+
SW6909
START
SW6910
VEP00U20
TOGGLE SW
P6903 P9300 1 1 KR7
P6903 P9300 2 2 KR6
P6903 P9300 3 3 KR5
P6903 P9300 4 4 KR4
P6903 P9300 5 5 KR3
P6903 P9300 6 6 KR2
P6903 P9300 7 7 KR1
P6903 P9300 8 8 SCAN3
GAIN
SW9300
0dB
HIGH
AGC
AWB
SW9301
A
B
PRE
OUTPUT
SW9302
CAM
BAR
SHUTTER
SW9303
OFF
ON
VAR
VEP00U56
P6903 P9400 9 1 KR7
P6903 P9400 10 2 KR6
P6903 P9400 11 3 POWER COM
POWER
SW9400
ON
SAVE
ON
VEP00U21
P6903 P9401 12 1 KR2
P6903 P9401 13 2 MODE CHECK COM
MODE CHECK
SW9401
VEP00U18
J6902 J9100 1 3 KR1
J6902 J9100 2 2 KR0
J6902 J9100 3 1 SCAN4
SUPER IRIS
SW9100
SCAN FILE
SW9101
P6901 P1011 P1010 P6004 4 4 2 2 SERIAL 0
P6901 P1011 P1010 P6004 3 3 1 1 LM SCK
P6901 P1011 P1010 P6004 6 6 4 4 LCD RQ
P6901 P1011 P1010 P6004 5 5 3 3 SERIAL 1
P6901 P1011 P1010 P6004 7 7 5 5 POWER ON
TO SUB SYSCON IC6501
+5V
5
7
6
IC6904
12V
P6901 P1011 12 1 NOREG
FROM REAR JACK PCB

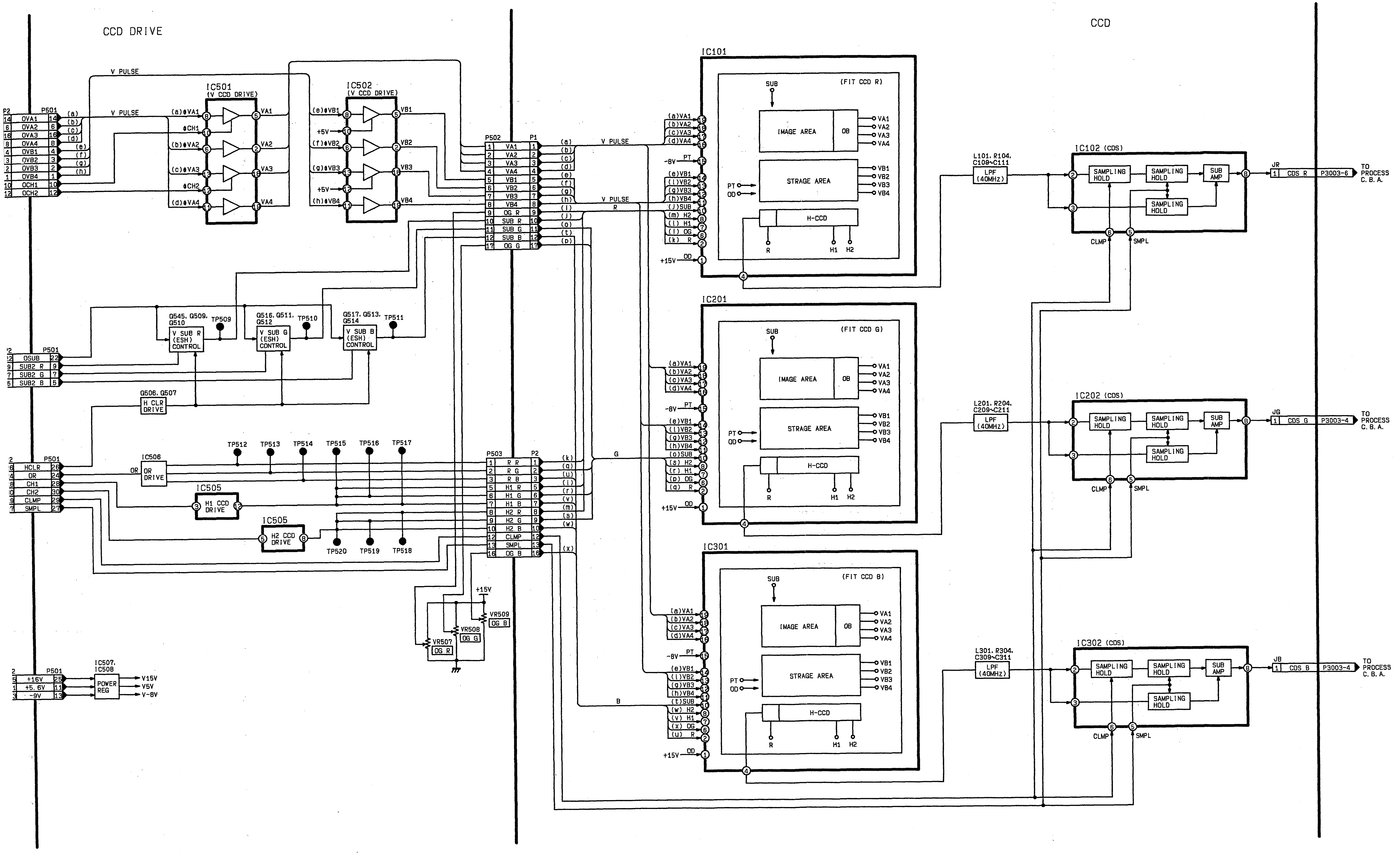
SYNC GENERATOR BLOCK DIAGRAM


CAMERA OUT
C.B.A
P3006-4
GEN LOCK IN
IC3001
CLAMP
SYNC SEP
IC3003
BURST FLAG PULSE GEN
IC3002
IC3006
BURST SEP
IC3004
S/H PULSE GEN
VR3004
S/H PULSE
IC3008
M.M
IC3007
GATE
IC3008
FILTER AMP
VR3003
CK1 PHASE
X3001
13.5MHz VXO
IC3009
IC3017
H RESET PULSE GEN
VR3005
H PULSE
IC3012
TP3005
FILTER AMP
X3003
D3005
14.3MHz (NTSC)
17.7MHz (PAL)
VXO
WAVEFORM SHAPER
L.P.F
IC3015 (SYNC GEN)
CK1
HR2
HR20
HR
HD
RHS
RSY
SDET
RBF
FS
WSC
SCDL
RBST
VXO1
SCC1
SCC2
FS3
SCH1
SCH2
VXO3
WINDOW PULSE GEN
1/429(NTSC)
1/435(PAL)
H SYNC GEN
2fH
1/2
COMPOSITE SYNC GEN
OUTPUT LATCH
TIMING SHIFT
NTSC
PAL
VP
DATA SELECTOR
1/455 (NTSC)
1/567 (PAL)
H SYNC GEN
2fH
1/2
H SYNC SEP
V SYNC SEP
SYNC DET
V RESET GEN
2fH
1/525 (NTSC)
1/625 (PAL)
V SYNC GEN
COUNTER DELAY
30Hz (NTSC)
25Hz (PAL)
1/2
1/2
2fsc
1/4
F/F
MULTI PLEXER
1/4
1/4
1/4
0/90°/180°/270°
CS1
BF
CBK
VD
VP
HD
SC3
SC4
IC3009
IC3009
IC3010
DC VOLTAGE GAIN
VR3004
SCH PHASE
X3002
14.3MHz(NTSC)
17.7MHz(PAL)
VXO
IC3020 (SUB SYNC GEN)
CK1
VD
VP
HD
BF
SYNC
SYNC
FRAME
SAETY ON L
SAFTY
LOWLUX
R0
R3
DATA
DFCT
WHITE BLEM COMP.
H PHASE CORSE
VR9501
P9500-4
P3007-4
H-PHASE
H PHASE FINE
SW9502
P9500-3
P3007-3
H-PHCRS1
P9500-2
P3007-2
H-PHCRS2
SC PHASE FINE
VR9500
P9500-5
P3007-5
SC-PH FINE
SW9500
H PHASE CORSE
P9500-7
P3007-7
SC-PH CRS1
SW9501
P9500-6
P3007-6
SC-PH CRS2
GEN LOCK C.B.A.

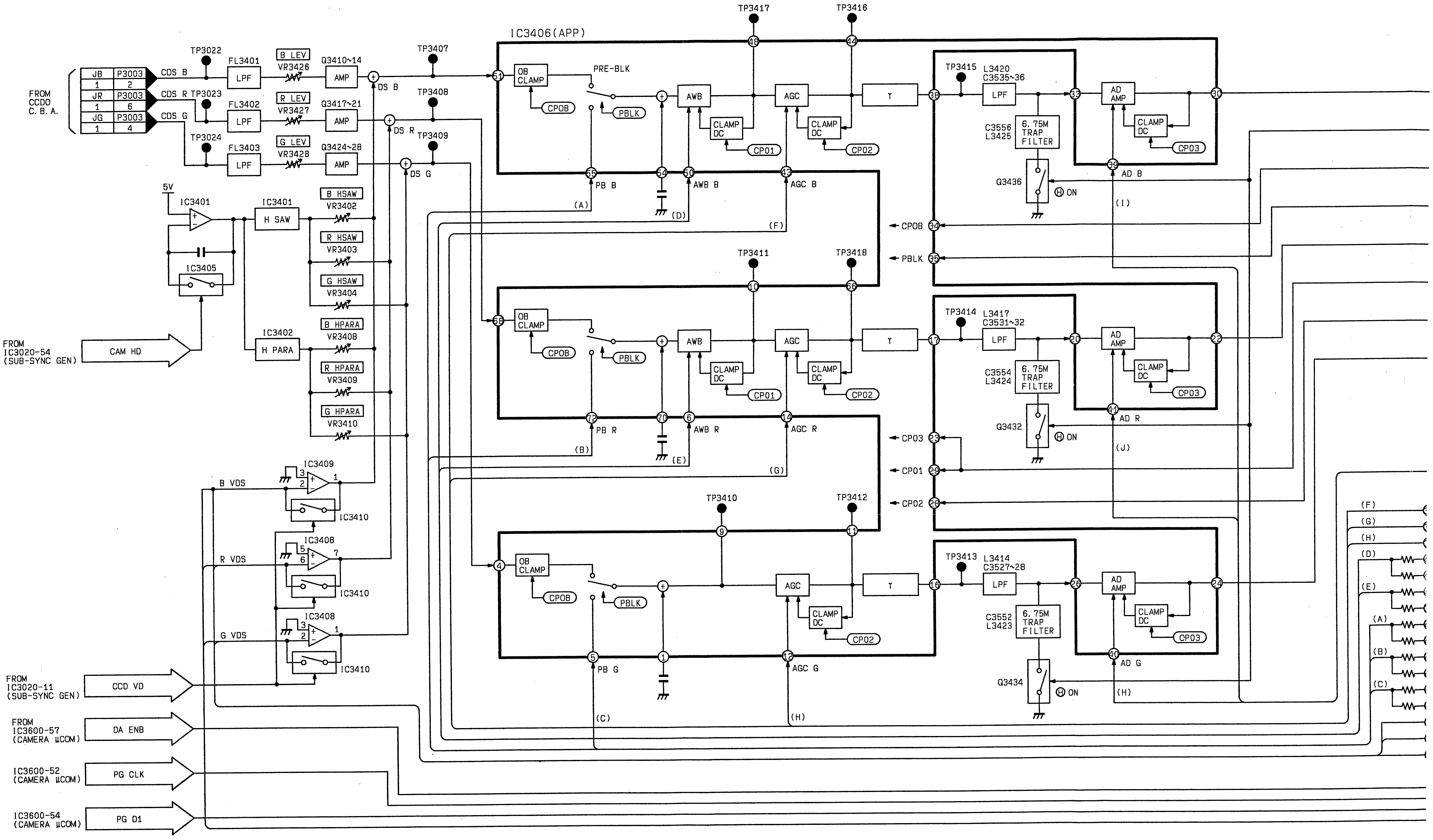

IC3008
M.M
IC3015 (SYNC GEN)
IC3008
FILTER AMP
X3001
13.5MHZ VXO
IC3009
VR3003
CK1 PHASE
CK1
WINDOW PULSE GEN
1/429(NTSC) 1/435(PAL)
H SYNC GEN
2fH
1/2
COMPOSITE SYNC GEN
OUTPUT LATCH
CS1
BF
CBK
VD
VP
HD
IC3017
H RESET PULSE GEN
VR3005
H PULSE
HR2
NTSC
PAL
TIMING SHIFT
HR20
HR
IC3009
HD
3004
S/H PULSE GEN
RHS
VR3004
S/H PULSE
DATA SELECTOR
1/455 (NTSC) 1/567 (PAL)
H SYNC GEN
2fH
1/2
V SYNC GEN
RSY
H SYNC SEP
V SYNC SEP
SYNC DET
V RESET GEN
2fH
1/525 (NTSC) 1/625 (PAL)
COUNTER DELAY
30HZ (NTSC) 25HZ (PAL)
3003
RST FLAG LSE GEN
IC3002
IC3006
BURST SEP
SDET
RBF
TP3005
X3003
D3005
14.3MHZ (NTSC) 17.7MHZ (PAL) VXO
FILTER AMP
WAVEFORM SHAPER
FS
1/2
WSC
2fsc
SCDL
1/2
RBST
VXO1
SCC1
SCC2
F/F
1/4
MULTI PLEXER
1/4
IC3010
DC VOLTAGE GAIN
X3002
14.3MHZ(NTSC) 17.7MHZ(PAL) VXO
VR3004
SCH PHASE
FS3
1/4
1/4
0/90°/180°/270°
SCH1
SCH2
VXO3
SC3
SC4
IC3009
IC3009
IC3020 (SUB SYNC GEN)
CK1
VD
VP
HD
BF
SYNC
SYNC GEN
CAMHD
CAMVD
CPO1
CPO2
CPO3
AVPL
AHD
ASYNCL
ENCCP
SAFTY ZONE
SAFY ZONE
FRAME
SAETY ON L
WHITE BLEMISH COMPARATOR
MCLKO
AD CLK
LOWLUX
R0
R3
DATA
ADDRESS
AD0
AD7
DFCT
IC3021
IC3022
TP3707
IC3022
TIMING SHIFT
VR3007
ADCK PHASE
VD
TO IC3712-21
IC3009
CS1
CS1
TO IC3704-24 (DSP)
BF
TO IC3704-23 (DSP)
CBK
TO IC3704-27 (DSP)
DSP SYNC L
FROM IC3704-28 (DSP)
DSP BF
FROM IC3704-29 (DSP)
P3004-8
P1-8
CCD HD
P3004-9
P1-9
CCD VD
TO CCD PULSE C.B.A.
CCD VD
TO D/S SUB C.B.A.
CPO1~O3
TO IC3406(APP)
CN3003-A23
CN3003-B23
CN3003-B16
CN3003-A17
CN3002-B16
CN3002-A17
CAM UP L
CN6006-A23 B23
TO SYSCON C.B.A.
TO VIDEO C.B.A.
CAM HD
TO IC3405(H D/S)
CPS SYNC
TO Q3711(ENCORDER)
CAM CP
TO IC3203-17(ENCORDER)
CN3002-A15
SAFETY MIX
TO VIDEO C.B.A.
MCLKO
TO IC3704-37(DSP)
ADCLKO
TO IC3701-12(D/A) IC3702-12(D/A) IC3703-12(D/A)
P3009-5~12
P3009-13~16
P3009-2
P3009-1
DFCTO
FROM IC3600-41 (CAMERA µCOM)
LL MODE L
FROM IC3600-38 (CAMERA µCOM)
VD
TO IC3600-25 (CAMERA µCOM)
HD
TO IC3600-28 (CAMERA µCOM)
CAM SC1
TO IC3203-5 (ENCORDER)
CAM SC2
TO IC3203-20 (ENCORDER)
CN3003
A19 SAFETY ZONE
FROM SYSCON C.B.A.

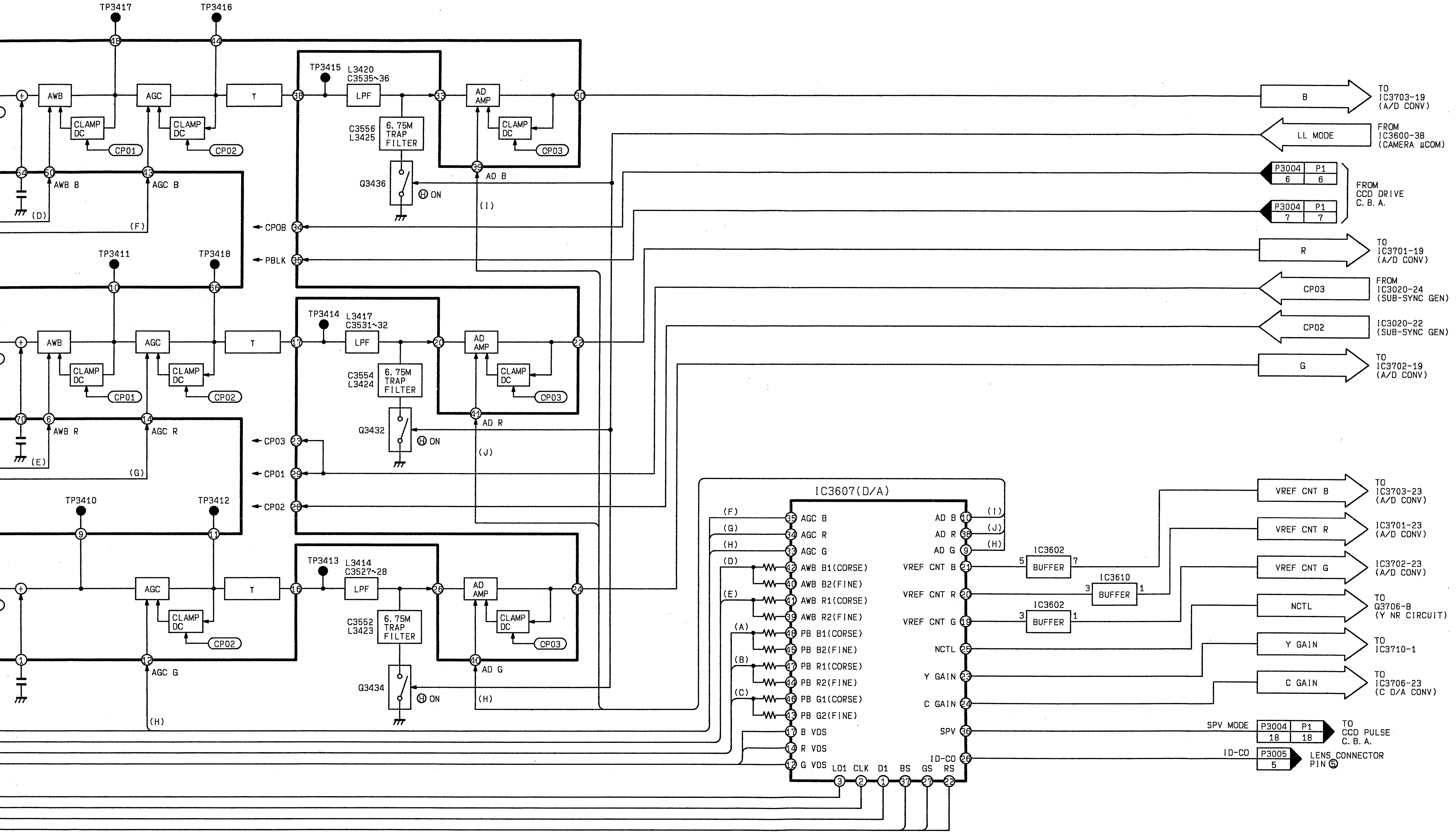
CCD DRIVE BLOCK DIAGRAM


CCD PULSE
CCD DRIVE
TO/FROM PROCESS C. B. A.
P1
P3004-8
P3004-9
CCD HD
CCD VD
IC2 (PLL CONTROL)
PHASE COMPARATOR
SHIFT RESISTER
1/6
1/143
LATCH
IC10, VL1 C23, C24
CLOCK GEN(27M)
P3004-4
2FCK
IC1 (PULSE GEN)
1/2
P3004-1
P3004-2
P3004-3
PG CLK
PG D1
PG ENB
S. DATA INPUT
SUB PLUSE (ESH) CONTROL
CH CONTROL PULSE GEN
V TIMING SHIFT RESISTER
H TIMING SHIFT RESISTER
V CCD DRIVE PULSE GEN
1~4
8~11
APP PULSE GEN
H CCD DRIVE PULSE GEN
IC3
GATE
IC7, 8, 9
S/H PULSE GEN
IC5
TIMING SHIFTER
VR1
VR2
IC5, IC6
TIMING SHIFTER
VR3
VR4
IC6
TIMING SHIFTER
VR5
VR6
P3004-6
P3004-7
P3004-18
P3004-17
CPOB
PBLK2
SPV MODE
LL MODE
IC11
POWER REG
H5V
P3004-16
P3004-12
P3004-14
CCD +16V
CAM5R6V
CCD -9V
P2
P501
OVA1
OVA2
OVA3
OVA4
OVB1
OVB2
OVB3
OVB4
OCH1
OCH2
V PULSE
IC501 (V CCD DRIVE)
(a)ΦVA1
ΦCH1
(b)ΦVA2
(c)ΦVA3
ΦCH2
(d)ΦVA4
VA1
VA2
VA3
VA4
IC502 (V CCD DRIVE)
(e)ΦVB1
+5V
(f)ΦVB2
(g)ΦVB3
(h)ΦVB4
VB1
VB2
VB3
VB4
OSUB
SUB2 R
SUB2 G
SUB2 B
VR7
VR8
VR9
SUB R
SUB G
SUB B
Q545, Q509, Q510
V SUB R (ESH) CONTROL
TP509
Q516, Q511, Q512
V SUB G (ESH) CONTROL
TP510
Q517, Q513, Q514
V SUB B (ESH) CONTROL
TP511
Q506, Q507
H CLR DRIVE
HCLR
OR
CH1
CH2
CLMP
SMPL
IC506
OR DRIVE
IC505
H1 CCD DRIVE
IC505
H2 CCD DRIVE
TP512
TP513
TP514
TP515
TP516
TP517
TP520
TP519
TP518
+16V
+5.6V
-9V
IC507, IC508
POWER REG
V15V
V5V
V-8V
P502
P1
VA1
VA2
VA3
VA4
VB1
VB2
VB3
VB4
OG R
SUB R
SUB G
SUB B
OG G
P503
P2
R R
R G
R B
H1 R
H1 G
H1 B
H2 R
H2 G
H2 B
CLMP
SMPL
OG B
+15V
VR507
OG R
VR508
OG G
VR509
OG B
IC101
IC201
IC301
V PULSE
R
G
B
-8V
PT
OD
+15V
(a)VA1
(b)VA2
(c)VA3
(d)VA4
(e)VB1
(f)VB2
(g)VB3
(h)VB4
(j)SUB
(m) H2
(l) H1
(i) OG
(k) R
(o)SUB
(s) H2
(r) H1
(p) OG
(q) R
(t)SUB
(w) H2
(v) H1
(x) OG
(u) R

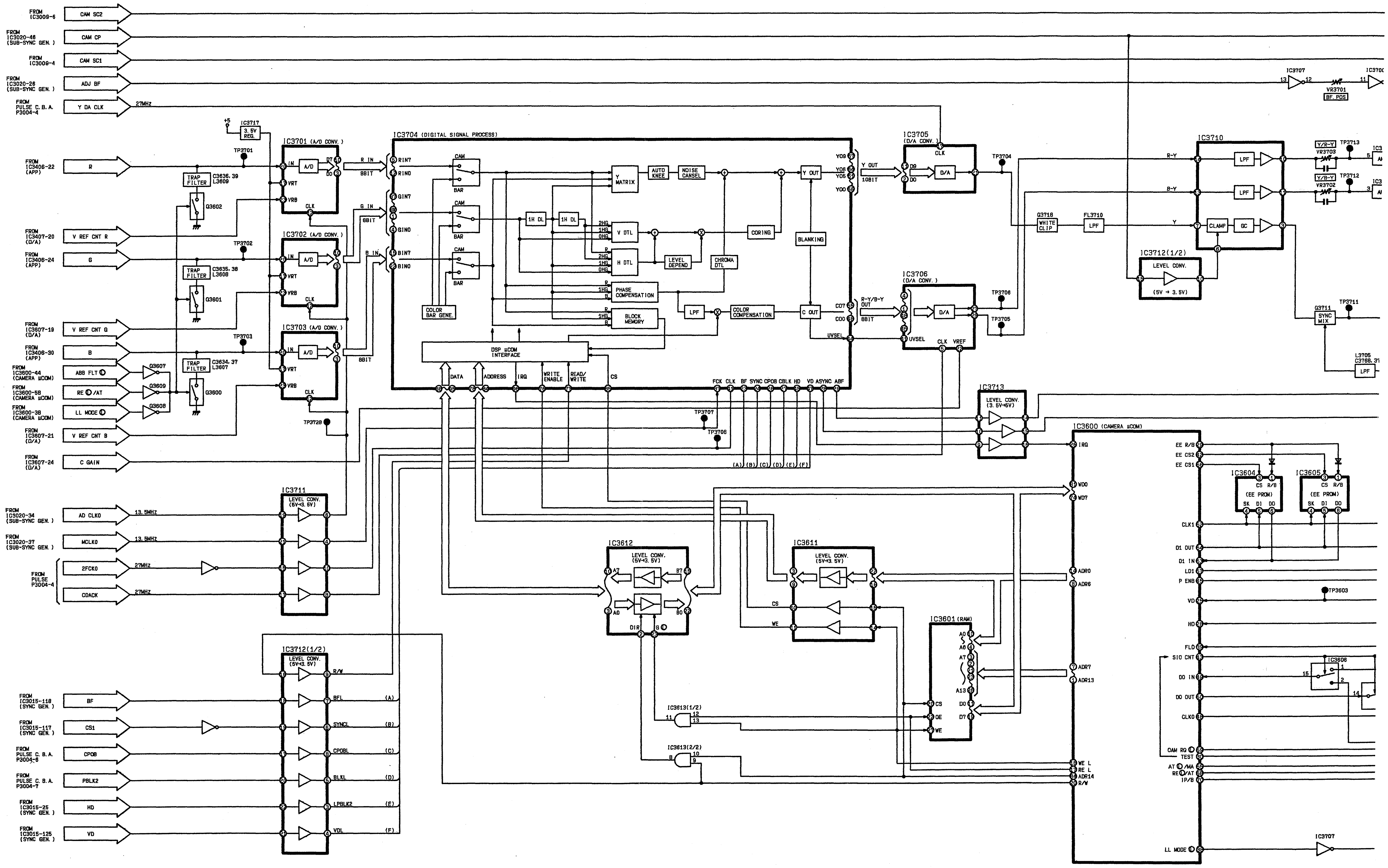

CCD DRIVE
CCD
V PULSE
IC501
(V CCD DRIVE)
IC502
(V CCD DRIVE)
P2
P501
OVA1
OVA2
OVA3
OVA4
OVB1
OVB2
OVB3
OVB4
OCH1
OCH2
(a)ϕVA1
ϕCH1
(b)ϕVA2
(c)ϕVA3
ϕCH2
(d)ϕVA4
(e)ϕVB1
+5V
(f)ϕVB2
(g)ϕVB3
(h)ϕVB4
VA1
VA2
VA3
VA4
VB1
VB2
VB3
VB4
P502
P1
SUB R
SUB G
SUB B
OG R
OG G
OG B
Q545, Q509, Q510
V SUB R (ESH) CONTROL
TP509
Q516, Q511, Q512
V SUB G (ESH) CONTROL
TP510
Q517, Q513, Q514
V SUB B (ESH) CONTROL
TP511
OSUB
SUB2 R
SUB2 G
SUB2 B
Q506, Q507
H CLR DRIVE
HCLR
OR
CH1
CH2
CLMP
SMPL
IC506
OR DRIVE
IC505
H1 CCD DRIVE
IC505
H2 CCD DRIVE
TP512
TP513
TP514
TP515
TP516
TP517
TP520
TP519
TP518
P503
R R
R G
R B
H1 R
H1 G
H1 B
H2 R
H2 G
H2 B
+15V
VR509
OG B
VR508
OG G
VR507
OG R
+16V
+5.6V
-9V
IC507, IC508
POWER REG
V15V
V5V
V-8V
IC101
(FIT CCD R)
IC201
(FIT CCD G)
IC301
(FIT CCD B)
SUB
IMAGE AREA
OB
STRAGE AREA
H-CCD
PT
OD
-8V
+15V
R
H1
H2
G
B
L101, R104, C108~C111
LPF (40MHZ)
L201, R204, C209~C211
L301, R304, C309~C311
IC102 (CDS)
IC202 (CDS)
IC302 (CDS)
SAMPLING HOLD
SUB AMP
CLMP
SMPL
JR
CDS R
P3003-6
JG
CDS G
P3003-4
JB
CDS B
P3003-4
TO PROCESS C. B. A.

APP BLOCK DIAGRAM

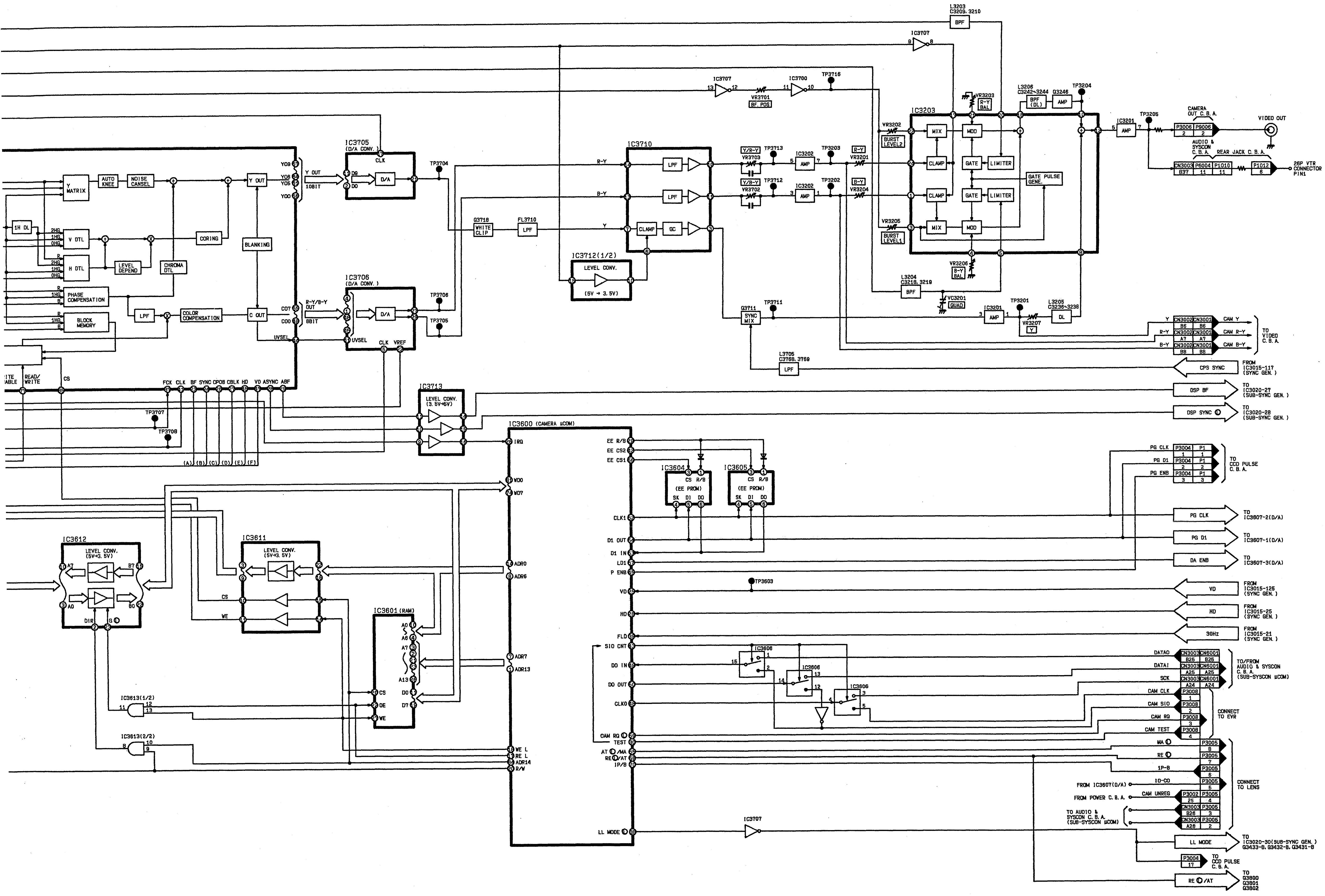

IC3406(APP)
FROM CCDO C.B.A.
JB P3003 1 2
JR P3003 1 6
JG P3003 1 4
CDS B
CDS R
CDS G
TP3022
TP3023
TP3024
FL3401
FL3402
FL3403
LPF
B LEV
R LEV
G LEV
VR3426
VR3427
VR3428
Q3410~14
Q3417~21
Q3424~28
AMP
DS B
DS R
DS G
TP3407
TP3408
TP3409
5V
IC3401
IC3405
H SAW
IC3402
H PARA
B HSAW
VR3402
R HSAW
VR3403
G HSAW
VR3404
B HPARA
VR3408
R HPARA
VR3409
G HPARA
VR3410
FROM IC3020-54 (SUB-SYNC GEN)
CAM HD
IC3409
IC3408
IC3410
B VDS
R VDS
G VDS
FROM IC3020-11 (SUB-SYNC GEN)
CCD VD
FROM IC3600-57 (CAMERA μCOM)
DA ENB
IC3600-52 (CAMERA μCOM)
PG CLK
IC3600-54 (CAMERA μCOM)
PG D1
OB CLAMP
CPOB
PRE-BLK
PBLK
AWB
AGC
CLAMP DC
CP01
CP02
CP03
T
TP3417
TP3416
TP3411
TP3418
TP3410
TP3412
PB B
AWB B
AGC B
PB R
AWB R
AGC R
PB G
AGC G
(A)
(B)
(C)
(D)
(E)
(F)
(G)
(H)
(I)
(J)
TP3415
L3420
C3535~36
TP3414
L3417
C3531~32
TP3413
L3414
C3527~28
C3556
L3425
C3554
L3424
C3552
L3423
6.75M TRAP FILTER
Q3436
Q3432
Q3434
H ON
AD AMP
AD B
AD R
AD G
CPOB
PBLK
CP03
CP01
CP02
51 48 44 38 33 30 55 54 50 43 34 35 39
10 36 66 17 20 22 72 70 6 14 23 29 28 41
9 11 4 16 26 24 5 1 12 40


TP3417
TP3416
TP3415
L3420
C3535~36
AWB
AGC
T
LPF
AD AMP
CLAMP DC
CP01
CP02
CP03
C3556
L3425
6.75M TRAP FILTER
Q3436
Ⓗ ON
AD B
(I)
AWB B
AGC B
(D)
(F)
CPOB
PBLK
TP3411
TP3418
TP3414
L3417
C3531~32
C3554
L3424
Q3432
AD R
(J)
AWB R
AGC R
(E)
(G)
CP03
CP01
CP02
TP3410
TP3412
TP3413
L3414
C3527~28
C3552
L3423
Q3434
AD G
(H)
AGC G
B
TO IC3703-19 (A/D CONV)
LL MODE
FROM IC3600-38 (CAMERA µCOM)
P3004 6
P1 6
P3004 7
P1 7
FROM CCD DRIVE C. B. A.
R
TO IC3701-19 (A/D CONV)
CP03
FROM IC3020-24 (SUB-SYNC GEN)
CP02
IC3020-22 (SUB-SYNC GEN)
G
TO IC3702-19 (A/D CONV)
IC3607(D/A)
AGC B
AGC R
AGC G
AWB B1(CORSE)
AWB B2(FINE)
AWB R1(CORSE)
AWB R2(FINE)
PB B1(CORSE)
PB B2(FINE)
PB R1(CORSE)
PB R2(FINE)
PB G1(CORSE)
PB G2(FINE)
B VDS
R VDS
G VDS
LD1 CLK D1 BS GS RS
AD B
AD R
AD G
VREF CNT B
VREF CNT R
VREF CNT G
NCTL
Y GAIN
C GAIN
SPV
ID-CO
(A)
(B)
(C)
IC3602 BUFFER
IC3610 BUFFER
IC3602 BUFFER
VREF CNT B
TO IC3703-23 (A/D CONV)
VREF CNT R
IC3701-23 (A/D CONV)
VREF CNT G
IC3702-23 (A/D CONV)
NCTL
TO Q3706-8 (Y NR CIRCUIT)
Y GAIN
TO IC3710-1
C GAIN
TO IC3706-23 (C D/A CONV)
SPV MODE
P3004 18
P1 18
TO CCD PULSE C. B. A.
ID-CO
P3005 5
LENS CONNECTOR PIN ⑤

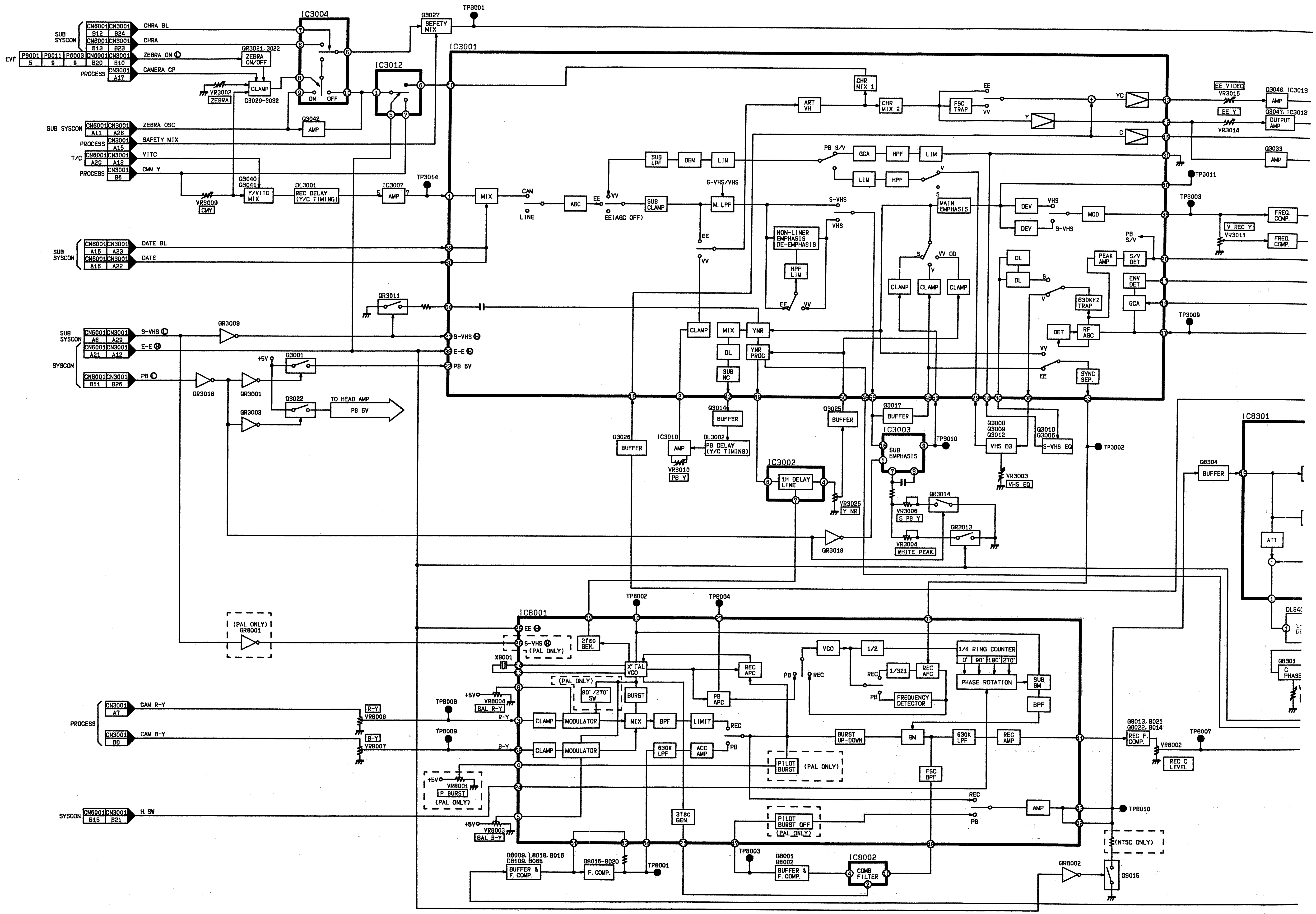
DSP/ENCODER BLOCK DIAGRAM

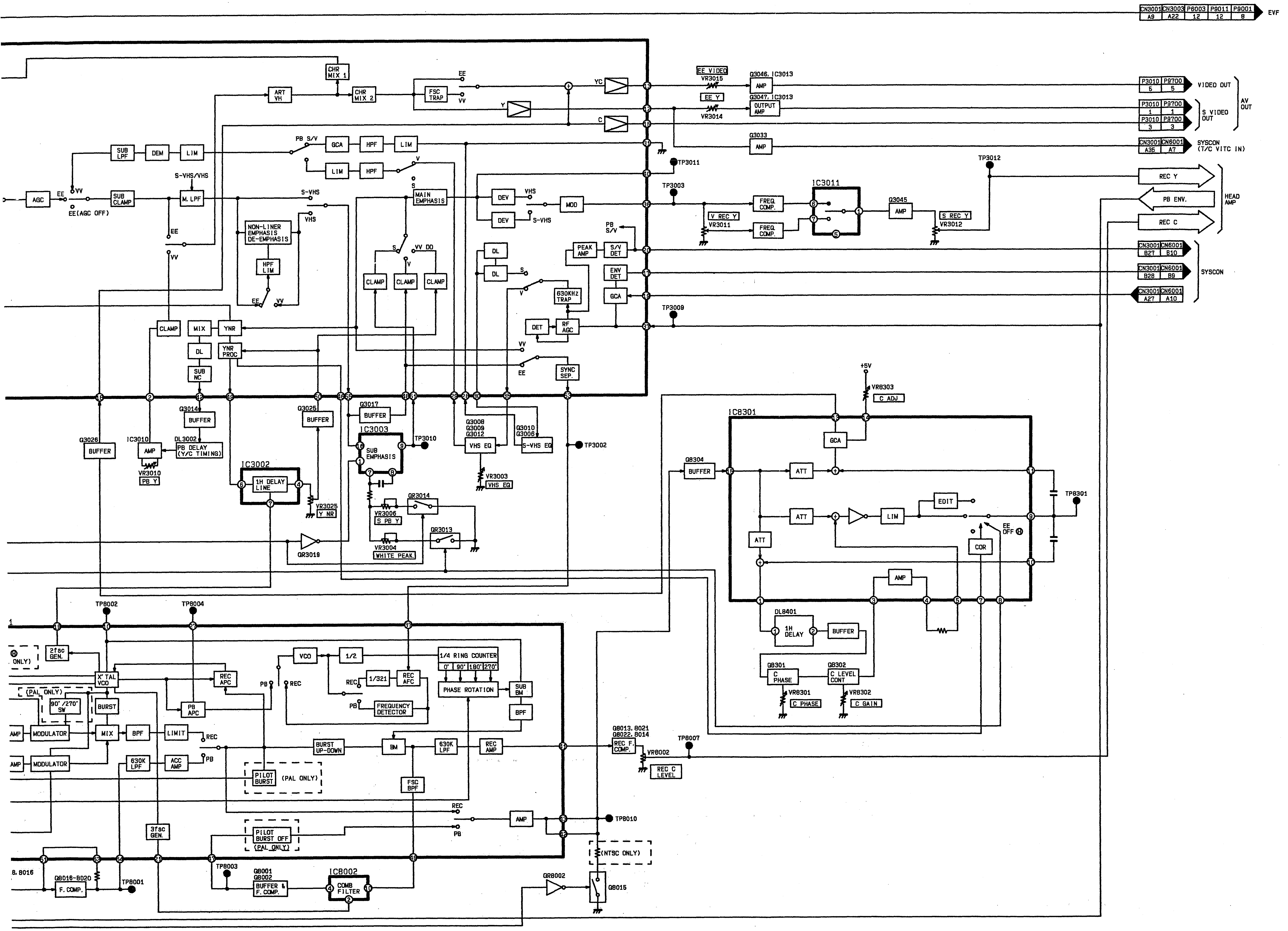


FROM IC3009-6 CAM SC2
FROM IC3020-46 (SUB-SYNC GEN.) CAM CP
FROM IC3009-4 CAM SC1
FROM IC3020-26 (SUB-SYNC GEN.) ADJ BF
FROM PULSE C.B.A. P3004-4 Y DA CLK 27MHz
FROM IC3406-22 (APP) R
FROM IC3407-20 (D/A) V REF CNT R
FROM IC3406-24 (APP) G
FROM IC3607-19 (D/A) V REF CNT G
FROM IC3406-30 (APP) B
FROM IC3600-44 (CAMERA µCOM) ABB FLT
FROM IC3600-58 (CAMERA µCOM) RE/AT
FROM IC3600-38 (CAMERA µCOM) LL MODE
FROM IC3607-21 (D/A) V REF CNT B
FROM IC3607-24 (D/A) C GAIN
FROM IC3020-34 (SUB-SYNC GEN.) AD CLKO 13.5MHz
FROM IC3020-37 (SUB-SYNC GEN.) MCLKO 13.5MHz
FROM PULSE P3004-4 2FCKO 27MHz CDACK 27MHz
FROM IC3015-118 (SYNC GEN.) BF
FROM IC3015-117 (SYNC GEN.) CS1
FROM PULSE C.B.A. P3004-6 CPOB
FROM PULSE C.B.A. P3004-7 PBLK2
FROM IC3015-25 (SYNC GEN.) HD
FROM IC3015-125 (SYNC GEN.) VD
+5 IC3717 3.5V REG.
TP3701 TP3702 TP3703 TP3728
TRAP FILTER C3636, 39 L3609 Q3602
TRAP FILTER C3635, 38 L3608 Q3601
TRAP FILTER C3634, 37 L3607 Q3600
Q3607 Q3609 Q3608
IC3701 (A/D CONV.) IN A/D VRT VRB CLK D7 D0
IC3702 (A/D CONV.)
IC3703 (A/D CONV.)
R IN 8BIT G IN 8BIT B IN 8BIT
IC3704 (DIGITAL SIGNAL PROCESS)
RIN7 RIN0 GIN7 GIN0 BIN7 BIN0
CAM BAR COLOR BAR GENE.
1H DL 1H DL
Y MATRIX AUTO KNEE NOISE CANSEL
V DTL H DTL LEVEL DEPEND CORING CHROMA DTL
PHASE COMPENSATION BLOCK MEMORY LPF COLOR COMPENSATION
BLANKING Y OUT C OUT
DSP µCOM INTERFACE
DATA ADDRESS IRQ WRITE ENABLE READ/WRITE CS
FCK CLK BF SYNC CPOB CBLK HD VD ASYNC ABF
Y09 Y08 Y05 Y00 C07 C00 UVSEL
Y OUT 10BIT R-Y/B-Y OUT 8BIT
IC3705 (D/A CONV.) CLK D9 D0 D/A
IC3706 (D/A CONV.) D/A UVSEL CLK VREF
TP3704 TP3706 TP3705 TP3707 TP3708
Q3718 WHITE CLIP FL3710 LPF
IC3710 R-Y B-Y Y LPF CLAMP GC
IC3712(1/2) LEVEL CONV. (5V → 3.5V)
IC3707 VR3701 BF.POS
Y/R-Y VR3703 TP3713 Y/B-Y VR3702 TP3712
Q3711 SYNC MIX TP3711 L3705 C3768, 3 LPF
IC3713 LEVEL CONV. (3.5V→5V)
IC3600 (CAMERA µCOM)
IRQ WD0 WD7 ADR0 ADR6 ADR7 ADR13 WE L RE L ADR14 R/W
EE R/B EE CS2 EE CS1 CLK1 D1 OUT D1 IN LD1 P ENB VD HD FLD SIO CNT DO IN DO OUT CLKO
CAM RQ TEST AT/MA RE/AT IP/B LL MODE
IC3604 (EE PROM) CS R/B SK DI DO
IC3605 (EE PROM) CS R/B SK DI DO
TP3603 IC3606 IC3707
IC3711 LEVEL CONV. (5V→3.5V)
IC3612 LEVEL CONV. (5V→3.5V) A7 A0 B7 B0 DIR G
IC3611 LEVEL CONV. (5V→3.5V) CS WE
IC3601 (RAM) A0 A6 A7 A13 CS OE WE D0 D7
IC3613(1/2) IC3613(2/2)
IC3712(1/2) LEVEL CONV. (5V→3.5V) R/W BFL SYNCL CPOBL BLKL LPBLK2 VDL
(A) (B) (C) (D) (E) (F)

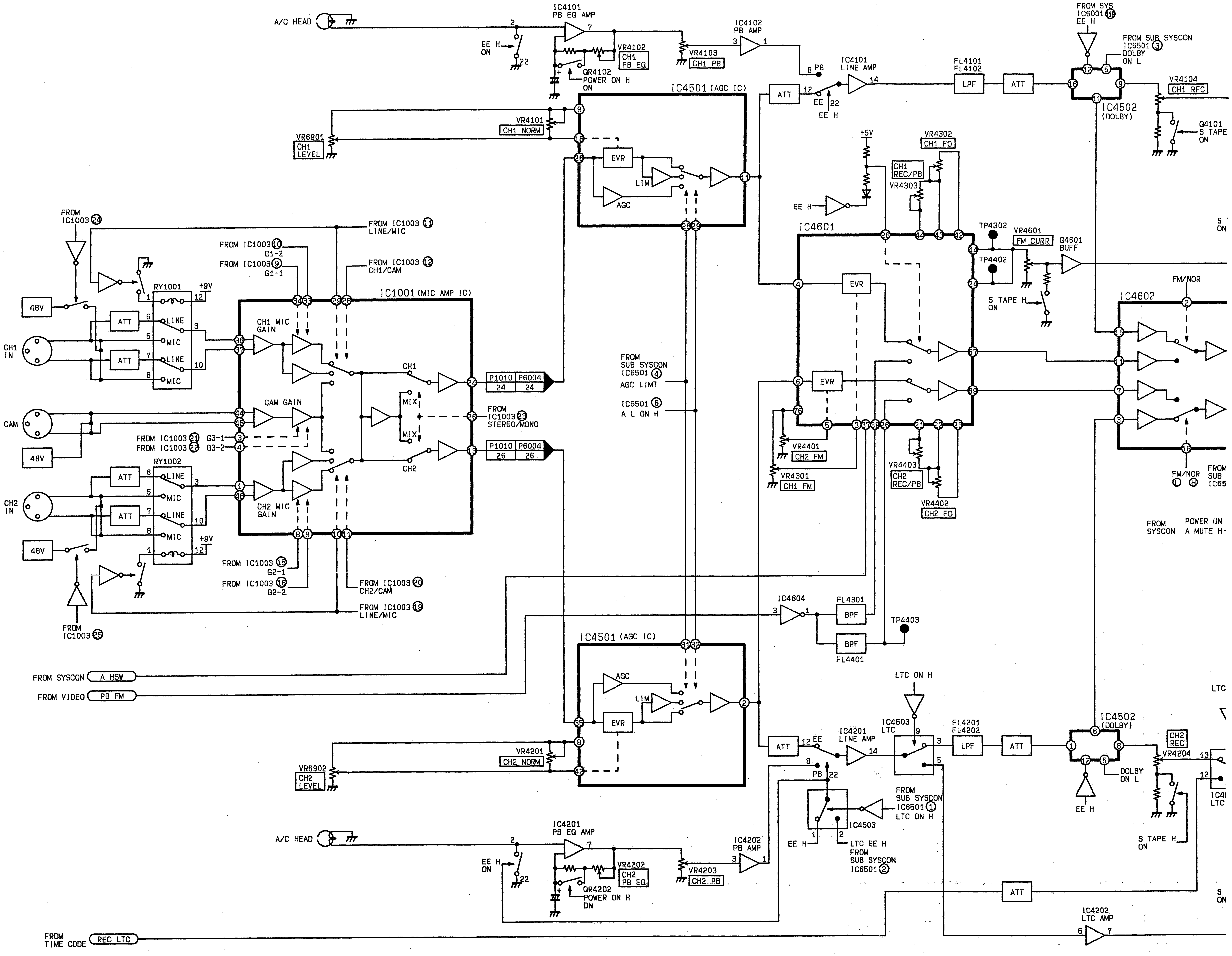

Y MATRIX
AUTO KNEE
NOISE CANSEL
Y OUT
1H DL
V DTL
H DTL
LEVEL DEPEND
CHROMA DTL
CORING
BLANKING
PHASE COMPENSATION
BLOCK MEMORY
LPF
COLOR COMPENSATION
C OUT
Y09
Y08
Y06
Y00
C07
C00
UVSEL
Y OUT 10BIT
R-Y/B-Y OUT 8BIT
IC3705 (D/A CONV.)
IC3706 (D/A CONV.)
D/A
CLK
VREF
TP3704
TP3705
TP3706
Q3718 WHITE CLIP
FL3710 LPF
IC3710
LPF
CLAMP
GC
R-Y
B-Y
Y
IC3712(1/2) LEVEL CONV. (5V → 3.5V)
Y/R-Y VR3703
Y/B-Y VR3702
TP3713
TP3712
TP3711
IC3202 AMP
TP3203
TP3202
R-Y VR3201
B-Y VR3204
Q3711 SYNC MIX
L3705 C3768, 3769 LPF
IC3707
IC3700
TP3716
VR3701 BF. POS
L3203 C3209, 3210 BPF
IC3203
VR3202 BURST LEVEL2
VR3205 BURST LEVEL1
MIX
MOD
CLAMP
GATE
LIMITER
GATE PULSE GENE.
VR3203 R-Y BAL
VR3206 B-Y BAL
L3206 C3242~3244 BPF (DL)
Q3246 AMP
TP3204
IC3201 AMP
TP3205
TP3201
L3204 C3218, 3219 BPF
VC3201 QUAD
VR3207 Y
L3205 C3236~3238 DL
CAMERA OUT C. B. A.
P3006 P9006
AUDIO & SYSCON C. B. A.
REAR JACK C. B. A.
CN3003 P6004 P1G10 B37 11 11
P1012 6
VIDEO OUT
26P VTR CONNECTOR PIN1
CN3002 CN3001 B6 B6 CAM Y
CN3002 CN3001 A7 A7 CAM R-Y
CN3002 CN3001 B8 B8 CAM B-Y
TO VIDEO C. B. A.
CPS SYNC
FROM IC3015-117 (SYNC GEN.)
DSP BF
TO IC3020-27 (SUB-SYNC GEN.)
DSP SYNC
TO IC3020-28 (SUB-SYNC GEN.)
WRITE ENABLE
READ/WRITE
CS
FCK CLK BF SYNC CP08 CBLK HD VD ASYNC ABF
TP3707
TP3708
(A) (B) (C) (D) (E) (F)
IC3713 LEVEL CONV. (3.5V→5V)
IC3600 (CAMERA μCOM)
IRQ
WD0
WD7
ADR0
ADR6
ADR7
ADR13
WE L
RE L
ADR14
R/W
EE R/B
EE CS2
EE CS1
IC3604 (EE PROM)
IC3605 (EE PROM)
CS R/B SK DI DO
CLK1
D1 OUT
D1 IN
LD1
P ENB
VD
HD
FLD
SIO CNT
DO IN
DO OUT
CLK0
CAM RQ
TEST
AT/MA
RE/AT
1P/B
LL MODE
TP3603
IC3606
PG CLK P3004 P1 1 1
PG D1 P3004 P1 2 2
PG ENB P3004 P1 3 3
TO CCD PULSE C. B. A.
PG CLK TO IC3607-2(D/A)
PG D1 TO IC3607-1(D/A)
DA ENB TO IC3607-3(D/A)
VD FROM IC3015-125 (SYNC GEN.)
HD FROM IC3015-25 (SYNC GEN.)
30Hz FROM IC3015-21 (SYNC GEN.)
DATAO CN3003 CN6001 B25 B25
DATAI CN3003 CN6001 A25 A25
SCK CN3003 CN6001 A24 A24
TO/FROM AUDIO & SYSCON C. B. A. (SUB-SYSCON μCOM)
CAM CLK P3008 1
CAM SIO P3008 2
CAM RQ P3008 3
CAM TEST P3008 4
CONNECT TO EVR
MA P3005 8
RE P3005 7
1P-B P3005 6
ID-CO P3005 5
FROM IC3607(D/A)
CAM UNREG P3002 P3005 25 4
FROM POWER C. B. A.
CN3003 P3005 B26 3
CN3003 P3005 A26 2
TO AUDIO & SYSCON C. B. A. (SUB-SYSCON μCOM)
CONNECT TO LENS
LL MODE TO IC3020-30(SUB-SYNC GEN.) Q3433-B, Q3432-B, Q3431-B
P3004 17 TO CCD PULSE C. B. A.
RE/AT TO Q3800 Q3801 Q3802
IC3612 LEVEL CONV. (5V→3.5V)
A7 A0 B7 B0 DIR G
IC3611 LEVEL CONV. (5V→3.5V)
CS
WE
IC3601 (RAM)
A0 A6 A7 A13 D0 D7 CS OE WE
IC3613(1/2)
IC3613(2/2)

VIDEO BLOCK DIAGRAM

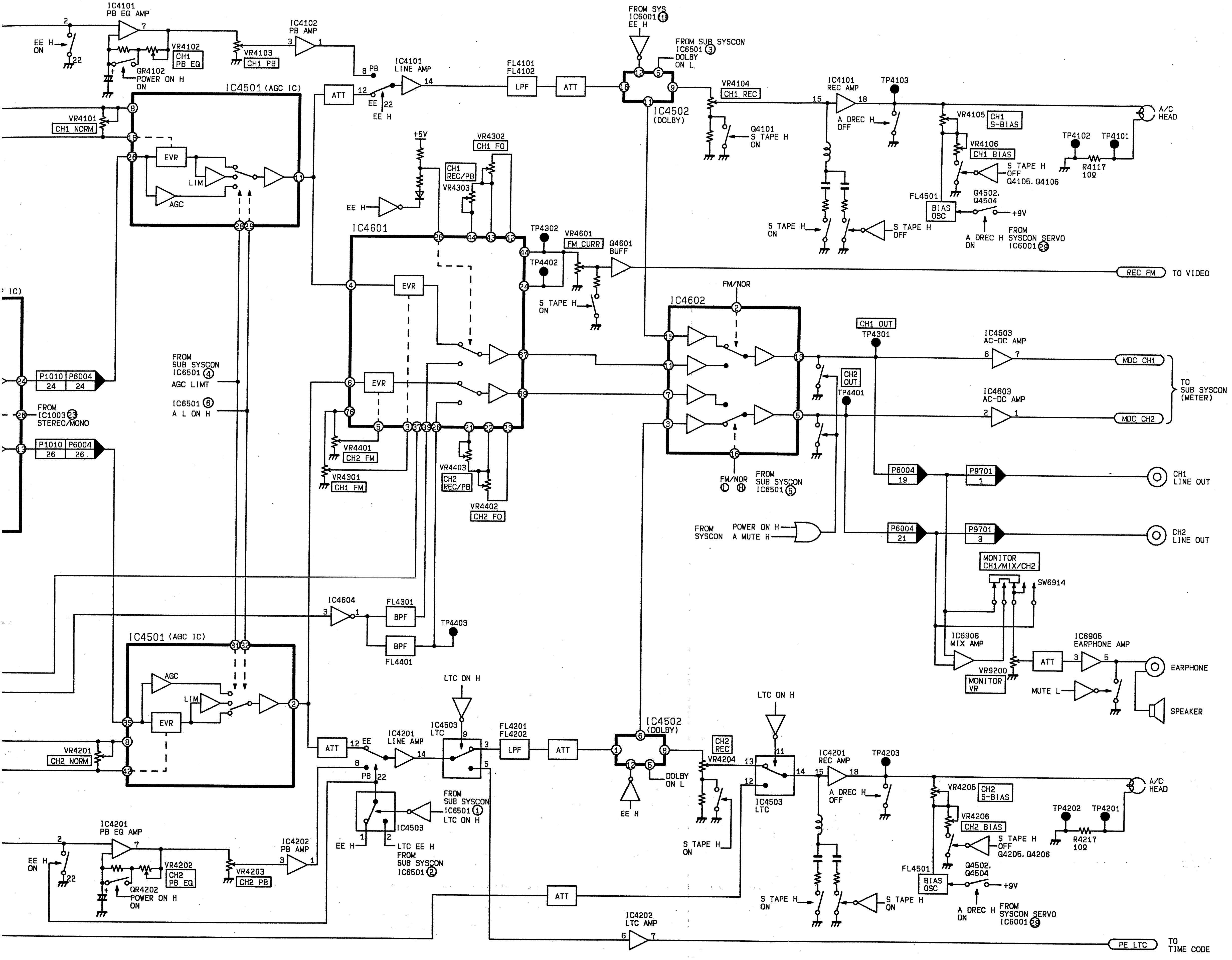

SUB SYSCON
EVF
PROCESS
CHRA BL
CHRA
ZEBRA ON
CAMERA CP
IC3004
G3027
SEFETY MIX
TP3001
IC3001
IC3012
ZEBRA ON/OFF
CLAMP
VR3002
ZEBRA
Q3029-3032
Q3042
AMP
ZEBRA OSC
SAFETY MIX
T/C
VITC
CMM Y
VR3009
CMY
Y/VITC MIX
DL3001
REC DELAY (Y/C TIMING)
IC3007
TP3014
MIX
CAM
LINE
AGC
EE(AGC OFF)
SUB CLAMP
M. LPF
S-VHS/VHS
SUB LPF
DEM
LIM
ART VH
CHR MIX 1
CHR MIX 2
FSC TRAP
GCA
HPF
MAIN EMPHASIS
NON-LINER EMPHASIS DE-EMPHASIS
HPF LIM
DEV
MOD
PEAK AMP
S/V DET
ENV DET
630KHz TRAP
DET
RF AGC
SYNC SEP.
DL
CLAMP
YNR
YNR PROC
SUB NC
EE VIDEO
VR3015
EE Y
VR3014
Q3046, IC3013
Q3047, IC3013
OUTPUT AMP
Q3033
TP3011
TP3003
TP3009
FREQ. COMP.
V REC Y
VR3011
DATE BL
DATE
QR3011
S-VHS
E-E
PB 5V
SYSCON
PB
QR3009
QR3016
QR3001
QR3003
Q3001
Q3022
TO HEAD AMP
Q3014
BUFFER
Q3026
IC3010
VR3010
PB Y
DL3002
PB DELAY (Y/C TIMING)
IC3002
1H DELAY LINE
VR3025
Y NR
Q3025
Q3017
IC3003
SUB EMPHASIS
TP3010
VR3006
S PB Y
VR3004
WHITE PEAK
QR3014
QR3013
QR3019
Q3008 Q3009 Q3012
VHS EQ
VR3003
Q3010 Q3006
S-VHS EQ
TP3002
IC8301
Q8304
ATT
DL84
Q8301
C PHASE
(PAL ONLY)
QR8001
IC8001
TP8002
TP8004
2fsc GEN.
X8001
X'TAL VCO
REC APC
PB APC
VCO
1/2
1/321
REC AFC
FREQUENCY DETECTOR
1/4 RING COUNTER
0° 90° 180° 270°
PHASE ROTATION
SUB BM
BPF
90°/270° SW
BURST
CAM R-Y
CAM B-Y
R-Y
VR8006
B-Y
VR8007
TP8008
TP8009
VR8004
BAL R-Y
VR8003
BAL B-Y
MODULATOR
LIMIT
630K LPF
ACC AMP
BURST UP-DOWN
BM
REC AMP
FSC BPF
PILOT BURST
PILOT BURST OFF
VR8001
P BURST
H. SW
3fsc GEN.
REC
AMP
TP8010
Q8013, 8021 Q8022, 8014
REC F. COMP.
VR8002
REC C LEVEL
TP8007
(NTSC ONLY)
QR8002
Q8015
Q8009, L8018, 8016 C8109, 8065
BUFFER & F. COMP.
Q8016-8020
F. COMP.
TP8001
TP8003
Q8001 Q8002
IC8002
COMB FILTER
+5V


CN3001 A9
CN3003 A22
P6003 12
P9011 12
P9001 8
EVF
CHR MIX 1
ART VH
CHR MIX 2
FSC TRAP
EE
VV
YC
Y
C
EE VIDEO
VR3015
EE Y
VR3014
Q3046, IC3013
AMP
Q3047, IC3013
OUTPUT AMP
P3010 P8700 5 5
VIDEO OUT
P3010 P8700 1 1
P3010 P8700 3 3
S VIDEO OUT
AV OUT
Q3033
AMP
CN3001 CN6001 A35 A7
SYSCON (T/C VITC IN)
SUB LPF
DEM
LIM
PB S/V
GCA
HPF
LIM
TP3011
TP3012
REC Y
PB ENV.
REC C
HEAD AMP
AGC
EE
EE(AGC OFF)
SUB CLAMP
S-VHS/VHS
M. LPF
S-VHS
VHS
NON-LINER EMPHASIS DE-EMPHASIS
HPF LIM
MAIN EMPHASIS
DEV
MOD
TP3003
V REC Y
VR3011
FREQ. COMP.
IC3011
Q3045
S REC Y
VR3012
PB S/V
PEAK AMP
S/V DET
ENV DET
GCA
CN3001 CN6001 B27 B10
CN3001 CN6001 B28 B9
CN3001 CN6001 A27 A10
SYSCON
CLAMP
VV DO
DL
630KHz TRAP
TP3009
MIX
YNR
YNR PROC
DL
SUB NC
DET
RF AGC
SYNC SEP.
+5V
VR8303
C ADJ
IC8301
Q3014
BUFFER
Q3025
Q3017
Q3008 Q3009 Q3012
VHS EQ
Q3010 Q3006
S-VHS EQ
TP3002
Q3026
IC3010
DL3002
PB DELAY (Y/C TIMING)
VR3010
PB Y
IC3003
SUB EMPHASIS
TP3010
VR3003
VHS EQ
IC3002
1H DELAY LINE
VR3025
Y NR
VR3006
S PB Y
QR3014
QR3013
VR3004
WHITE PEAK
QR3019
Q8304
ATT
EDIT
LIM
TP8301
EE OFF
COR
AMP
DL8401
1H DELAY
Q8301
C PHASE
VR8301
Q8302
C LEVEL CONT
VR8302
C GAIN
TP8002
TP8004
2fsc GEN.
ONLY)
X'TAL VCO
(PAL ONLY)
90°/270° SW
BURST
MODULATOR
MIX
BPF
LIMIT
REC
PB
630K LPF
ACC AMP
PB APC
REC APC
VCO
1/2
1/321
REC AFC
FREQUENCY DETECTOR
1/4 RING COUNTER
0° 90° 180° 270°
PHASE ROTATION
SUB BM
BPF
BURST UP-DOWN
BM
630K LPF
REC AMP
PILOT BURST
(PAL ONLY)
FSC BPF
Q8013, 8021 Q8022, 8014
REC F. COMP.
VR8002
REC C LEVEL
TP8007
AMP
TP8010
3fsc GEN.
PILOT BURST OFF
(PAL ONLY)
(NTSC ONLY)
8, 8016
Q8016-8020
F. COMP.
TP8001
TP8003
Q8001 Q8002
BUFFER & F. COMP.
IC8002
COMB FILTER
QR8002
Q8015

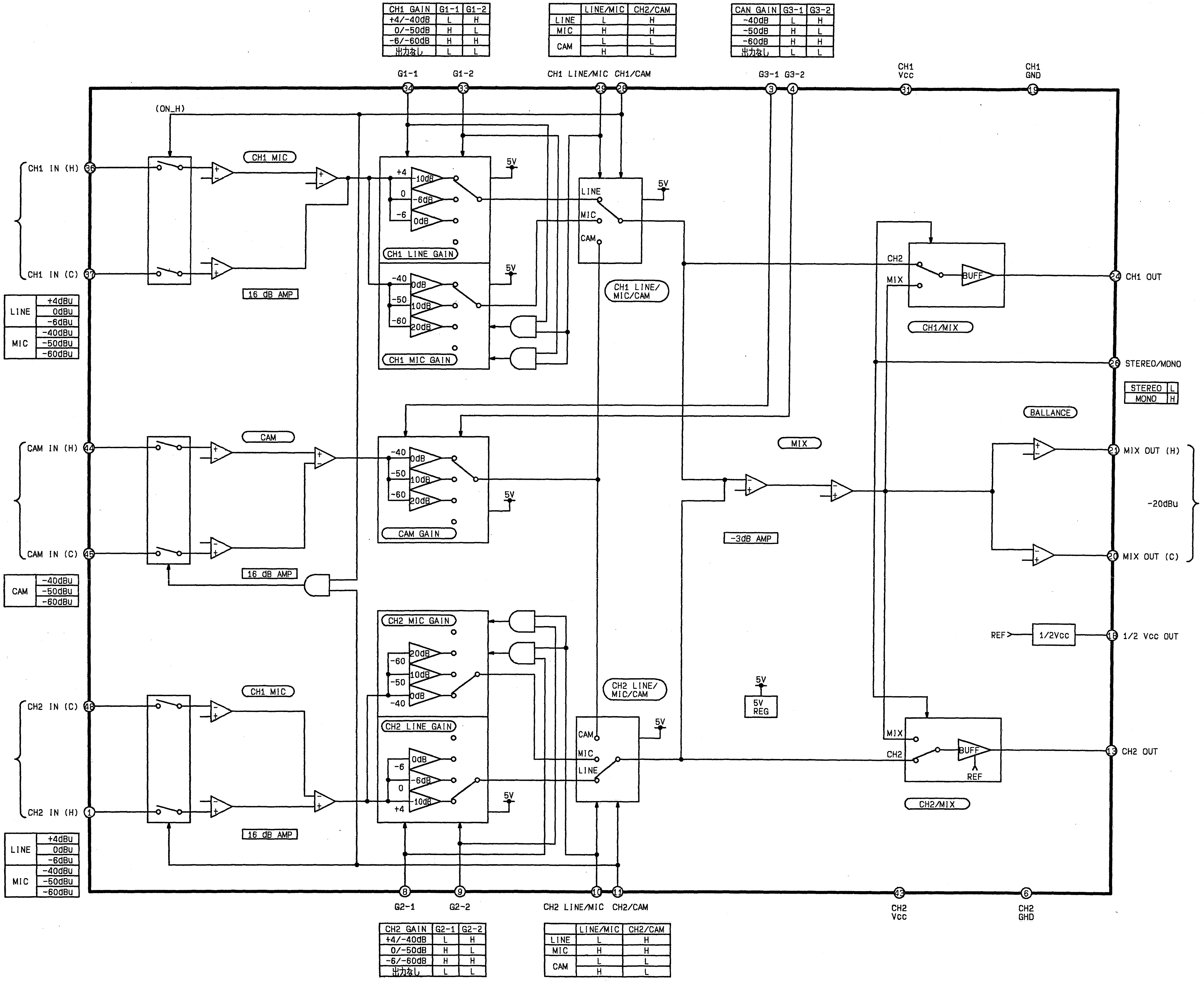
AUDIO BLOCK DIAGRAM



A/C HEAD
EE H
ON
IC4101
PB EQ AMP
VR4102
CH1 PB EQ
QR4102
POWER ON H
ON
IC4102
PB AMP
VR4103
CH1 PB
PB
IC4101
LINE AMP
EE H
FL4101
FL4102
LPF
ATT
FROM SYS
IC6001
FROM SUB SYSCON
IC6501
DOLBY
ON L
IC4502
(DOLBY)
VR4104
CH1 REC
Q4101
S TAPE
ON
IC4501 (AGC IC)
VR4101
CH1 NORM
VR6901
CH1 LEVEL
EVR
LIM
AGC
+5V
VR4302
CH1 FO
CH1 REC/PB
VR4303
IC4601
TP4302
TP4402
VR4601
FM CURR
Q4601
BUFF
S TAPE H
ON
FM/NOR
IC4602
FROM IC1003
LINE/MIC
G1-2
G1-1
CH1/CAM
RY1001
+9V
LINE
MIC
48V
CH1 IN
CAM
CH2 IN
IC1001 (MIC AMP IC)
CH1 MIC GAIN
CAM GAIN
CH2 MIC GAIN
CH1
CH2
MIX
P1010
P6004
STEREO/MONO
G3-1
G3-2
RY1002
G2-1
G2-2
CH2/CAM
FROM SUB SYSCON
IC6501
AGC LIMT
A L ON H
VR4401
CH2 FM
VR4301
CH1 FM
VR4403
CH2 REC/PB
VR4402
CH2 FO
FM/NOR
FROM SUB IC65
FROM SYSCON
POWER ON
A MUTE H
IC4604
FL4301
BPF
FL4401
TP4403
FROM SYSCON
A HSW
FROM VIDEO
PB FM
LTC ON H
IC4503
LTC
IC4201
LINE AMP
FL4201
FL4202
VR4201
CH2 NORM
VR6902
CH2 LEVEL
CH2 REC
VR4204
EE H
LTC ON H
LTC EE H
IC4202
PB AMP
VR4202
CH2 PB EQ
QR4202
VR4203
CH2 PB
S TAPE H
ON
IC4202
LTC AMP
FROM TIME CODE
REC LTC
LTC


IC4101
PB EQ AMP
EE H
ON
VR4102
CH1 PB EQ
QR4102
POWER ON H
ON
VR4103
CH1 PB
IC4102
PB AMP
8 PB
IC4501 (AGC IC)
VR4101
CH1 NORM
EVR
LIM
AGC
ATT
EE
EE H
IC4101
LINE AMP
FL4101
FL4102
LPF
ATT
FROM SYS
IC6001 ⑲
EE H
FROM SUB SYSCON
IC6501 ③
DOLBY
ON L
IC4502
(DOLBY)
VR4104
CH1 REC
Q4101
S TAPE H
ON
IC4101
REC AMP
A DREC H
OFF
TP4103
VR4105
CH1 S-BIAS
VR4106
CH1 BIAS
A/C
HEAD
TP4102
TP4101
R4117
10Ω
S TAPE H
OFF
Q4105, Q4106
FL4501
BIAS OSC
Q4502,
Q4504
+9V
S TAPE H
ON
S TAPE H
OFF
A DREC H
ON
FROM
SYSCON SERVO
IC6001 ㉙
+5V
VR4302
CH1 FO
CH1 REC/PB
VR4303
EE H
IC4601
TP4302
VR4601
FM CURR
Q4601
BUFF
TP4402
S TAPE H
ON
REC FM
TO VIDEO
EVR
EVR
VR4401
CH2 FM
VR4301
CH1 FM
VR4403
CH2 REC/PB
VR4402
CH2 FO
P IC)
P1010
P6004
24
24
FROM
IC1003 ㉓
STEREO/MONO
P1010
P6004
26
26
FROM
SUB SYSCON
IC6501 ④
AGC LIMT
IC6501 ⑥
A L ON H
FM/NOR
IC4602
FM/NOR
Ⓛ Ⓗ
FROM
SUB SYSCON
IC6501 ⑤
CH1 OUT
TP4301
CH2 OUT
TP4401
IC4603
AC-DC AMP
MDC CH1
IC4603
AC-DC AMP
MDC CH2
TO
SUB SYSCON
(METER)
FROM
SYSCON
POWER ON H
A MUTE H
P6004
19
P9701
1
CH1
LINE OUT
P6004
21
P9701
3
CH2
LINE OUT
MONITOR
CH1/MIX/CH2
SW6914
IC6906
MIX AMP
IC6905
EARPHONE AMP
ATT
VR9200
MONITOR VR
EARPHONE
MUTE L
SPEAKER
IC4604
FL4301
BPF
TP4403
BPF
FL4401
IC4501 (AGC IC)
AGC
LIM
EVR
VR4201
CH2 NORM
LTC ON H
IC4503
LTC
ATT
EE
IC4201
LINE AMP
8
PB
FL4201
FL4202
LPF
ATT
IC4502
(DOLBY)
EE H
DOLBY
ON L
CH2 REC
VR4204
S TAPE H
ON
LTC ON H
IC4503
LTC
IC4201
REC AMP
A DREC H
OFF
TP4203
VR4205
CH2 S-BIAS
VR4206
CH2 BIAS
A/C
HEAD
TP4202
TP4201
R4217
10Ω
S TAPE H
OFF
Q4205, Q4206
FL4501
BIAS OSC
Q4502,
Q4504
+9V
A DREC H
ON
FROM
SYSCON SERVO
IC6001 ㉙
S TAPE H
ON
S TAPE H
ON
ATT
IC4503
EE H
LTC EE H
FROM
SUB SYSCON
IC6501 ②
FROM
SUB SYSCON
IC6501 ①
LTC ON H
IC4201
PB EQ AMP
EE H
ON
QR4202
POWER ON H
ON
VR4202
CH2 PB EQ
VR4203
CH2 PB
IC4202
PB AMP
IC4202
LTC AMP
PE LTC
TO
TIME CODE

MIC AMP BLOCK DIAGRAM


G1-1
G1-2
CH1 LINE/MIC
CH1/CAM
G3-1
G3-2
CH1 Vcc
CH1 GND
(ON_H)
CH1 IN (H)
CH1 IN (C)
CH1 MIC
16 dB AMP
+4
0
-6
10dB
-6dB
0dB
CH1 LINE GAIN
5V
-40
-50
-60
0dB
10dB
20dB
CH1 MIC GAIN
LINE
MIC
CAM
CH1 LINE/ MIC/CAM
CH2
MIX
BUFF
CH1 OUT
CH1/MIX
STEREO/MONO
BALLANCE
CAM IN (H)
CAM IN (C)
CAM
CAM GAIN
MIX
-3dB AMP
MIX OUT (H)
-20dBu
MIX OUT (C)
REF
1/2Vcc
1/2 Vcc OUT
CH2 MIC GAIN
CH2 LINE/ MIC/CAM
5V REG
CH2 IN (C)
CH2 IN (H)
CH1 MIC
CH2 LINE GAIN
CH2 OUT
CH2/MIX
G2-1
G2-2
CH2 LINE/MIC
CH2/CAM
CH2 Vcc
CH2 GHD
36
37
44
45
48
1
34
33
29
28
3
4
31
19
24
26
21
20
18
13
8
9
10
11
43
6

CH1 GAIN	G1-1	G1-2
+4/-40dB	L	H
0/-50dB	H	L
-6/-60dB	H	H
出力なし	L	L

	LINE/MIC	CH2/CAM
LINE	L	H
MIC	H	H
CAM	L	L
	H	L

CAN GAIN	G3-1	G3-2
-40dB	L	H
-50dB	H	L
-60dB	H	H
出力なし	L	L

LINE	+4dBu
	0dBu
	-6dBu
MIC	-40dBu
	-50dBu
	-60dBu

STEREO	L
MONO	H

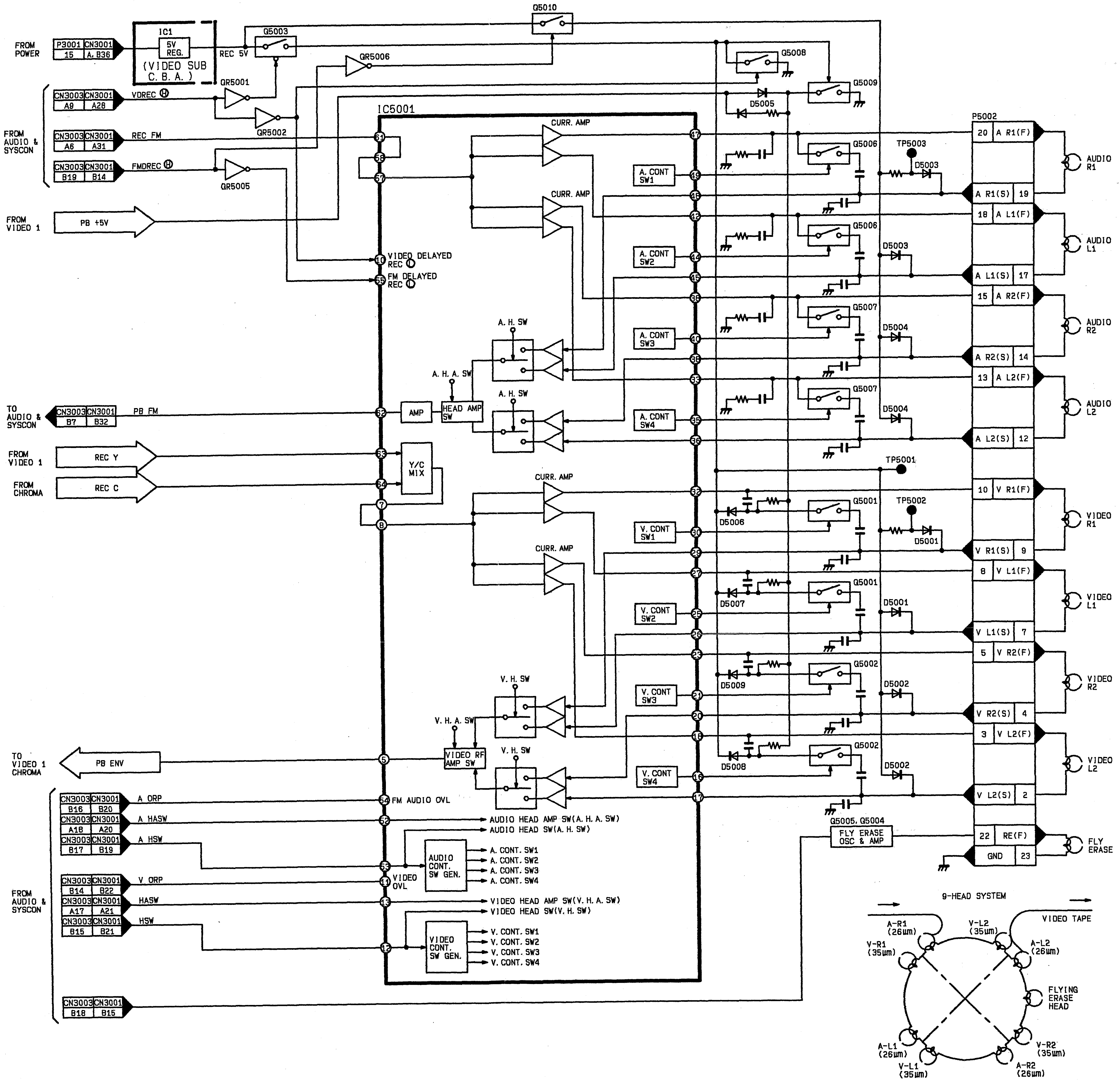
CAM	-40dBu
	-50dBu
	-60dBu

LINE	+4dBu
	0dBu
	-6dBu
MIC	-40dBu
	-50dBu
	-60dBu

CH2 GAIN	G2-1	G2-2
+4/-40dB	L	H
0/-50dB	H	L
-6/-60dB	H	H
出力なし	L	L

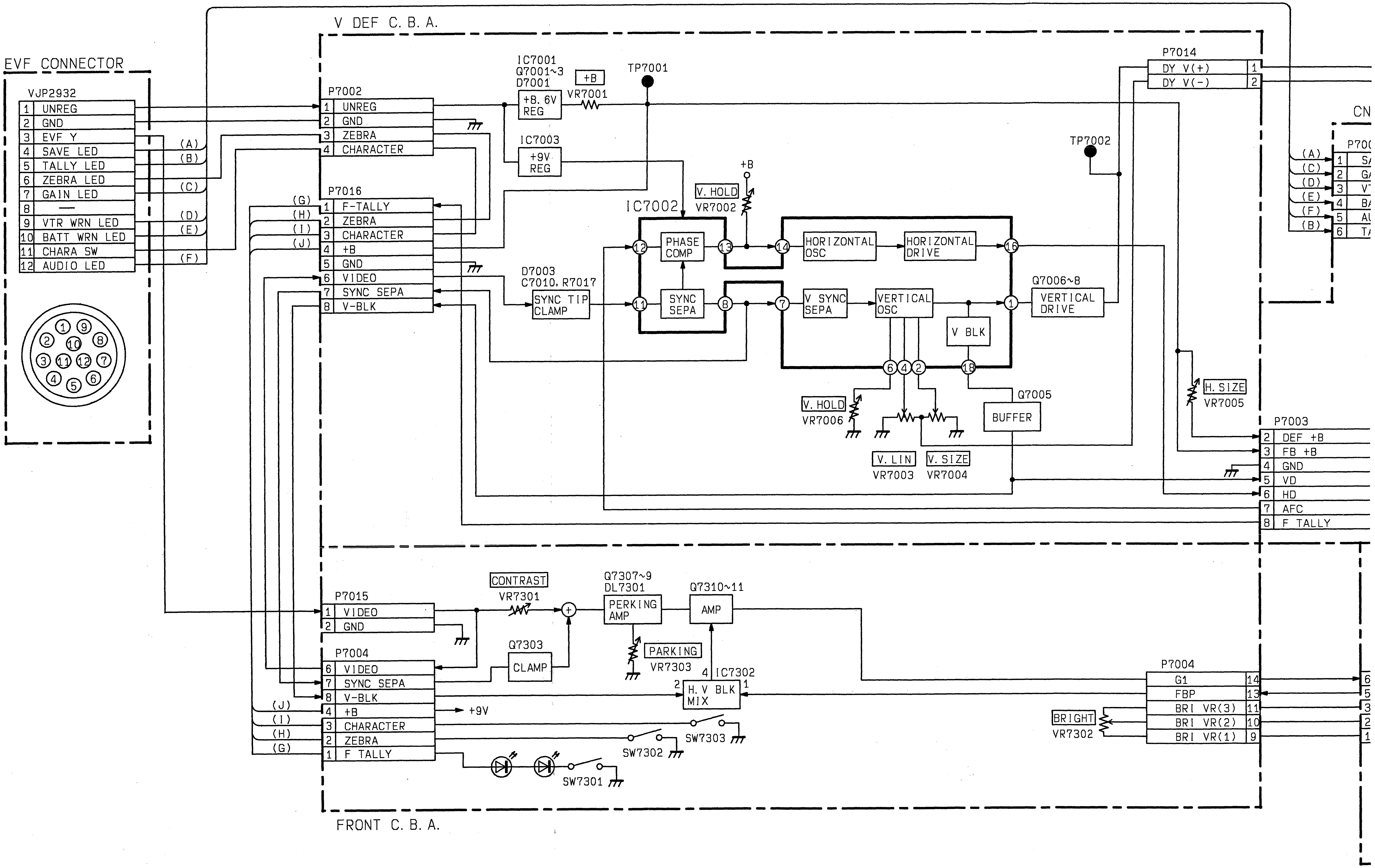
	LINE/MIC	CH2/CAM
LINE	L	H
MIC	H	H
CAM	L	L
	H	L

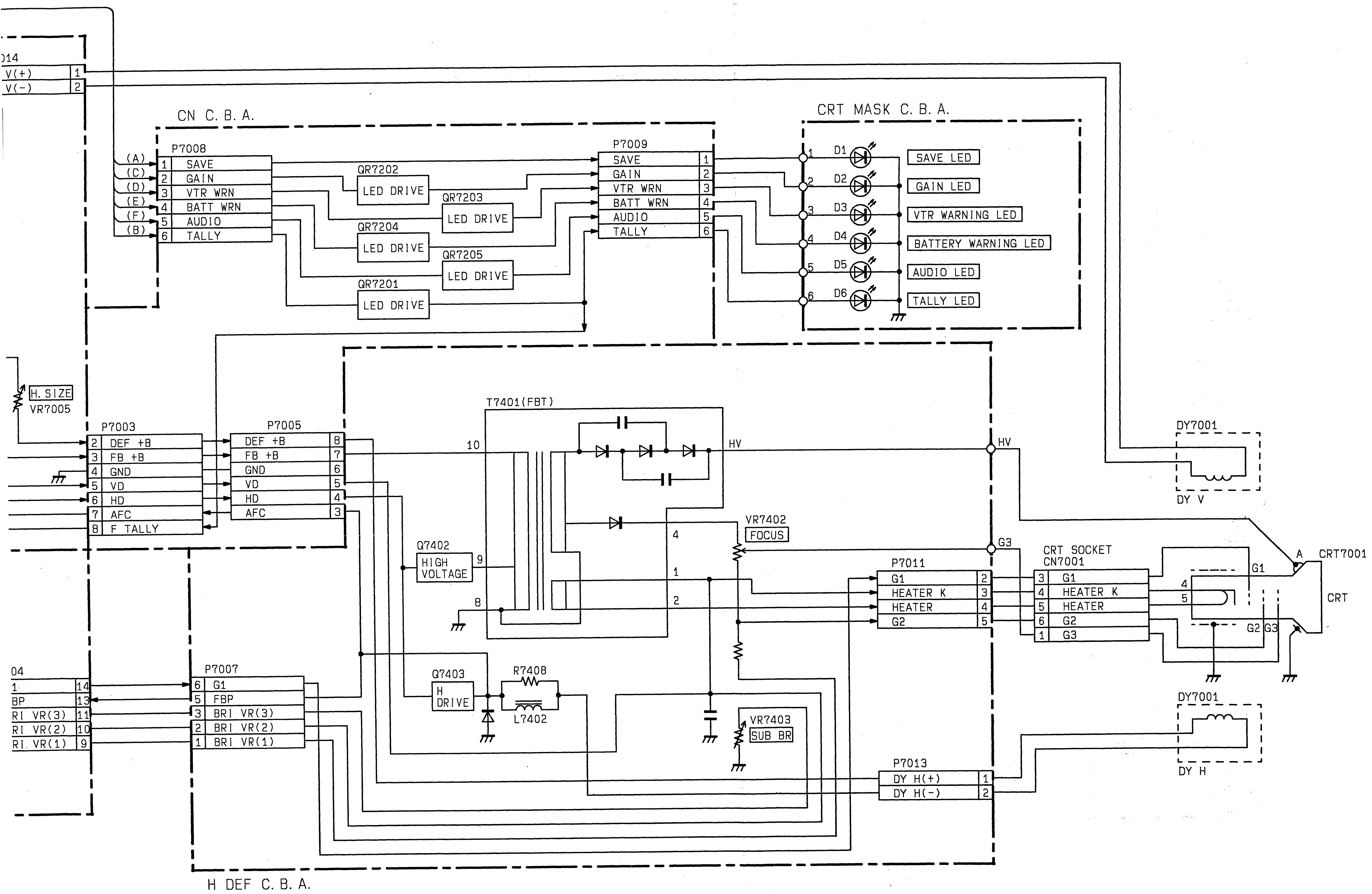
HEAD AMP BLOCK DIAGRAM



FROM POWER
P3001 15
CN3001 A.B36
IC1 5V REG.
(VIDEO SUB C.B.A.)
REC 5V
Q5003
Q5010
QR5006
QR5001
QR5002
QR5005
FROM AUDIO & SYSCON
CN3003 A9 CN3001 A28 VDREC Ⓗ
CN3003 A6 CN3001 A31 REC FM
CN3003 B19 CN3001 B14 FMDREC Ⓗ
FROM VIDEO 1
PB +5V
IC5001
CURR. AMP
VIDEO DELAYED REC Ⓛ
FM DELAYED REC Ⓛ
A. CONT SW1
A. CONT SW2
A. CONT SW3
A. CONT SW4
A. H. SW
A. H. A. SW
HEAD AMP SW
AMP
TO AUDIO & SYSCON
CN3003 B7 CN3001 B32 PB FM
FROM VIDEO 1
REC Y
FROM CHROMA
REC C
Y/C MIX
V. CONT SW1
V. CONT SW2
V. CONT SW3
V. CONT SW4
V. H. SW
V. H. A. SW
VIDEO RF AMP SW
TO VIDEO 1 CHROMA
PB ENV
CN3003 B16 CN3001 B20 A ORP
CN3003 A18 CN3001 A20 A HASW
CN3003 B17 CN3001 B19 A HSW
FM AUDIO OVL
AUDIO HEAD AMP SW(A. H. A. SW)
AUDIO HEAD SW(A. H. SW)
AUDIO CONT. SW GEN.
A. CONT. SW1
A. CONT. SW2
A. CONT. SW3
A. CONT. SW4
VIDEO OVL
CN3003 B14 CN3001 B22 V ORP
CN3003 A17 CN3001 A21 HASW
CN3003 B15 CN3001 B21 HSW
VIDEO HEAD AMP SW(V. H. A. SW)
VIDEO HEAD SW(V. H. SW)
VIDEO CONT. SW GEN.
V. CONT. SW1
V. CONT. SW2
V. CONT. SW3
V. CONT. SW4
CN3003 B18 CN3001 B15
Q5008
Q5009
D5005
Q5006
Q5007
Q5001
Q5002
D5003
D5004
D5001
D5002
D5006
D5007
D5008
D5009
TP5003
TP5001
TP5002
Q5005, Q5004
FLY ERASE OSC & AMP
P5002
20 A R1(F)
A R1(S) 19
18 A L1(F)
A L1(S) 17
15 A R2(F)
A R2(S) 14
13 A L2(F)
A L2(S) 12
10 V R1(F)
V R1(S) 9
8 V L1(F)
V L1(S) 7
5 V R2(F)
V R2(S) 4
3 V L2(F)
V L2(S) 2
22 RE(F)
GND 23
AUDIO R1
AUDIO L1
AUDIO R2
AUDIO L2
VIDEO R1
VIDEO L1
VIDEO R2
VIDEO L2
FLY ERASE
9-HEAD SYSTEM
VIDEO TAPE
A-R1 (26µm)
V-L2 (35µm)
V-R1 (35µm)
A-L2 (26µm)
FLYING ERASE HEAD
A-L1 (26µm)
V-L1 (35µm)
A-R2 (26µm)
V-R2 (35µm)

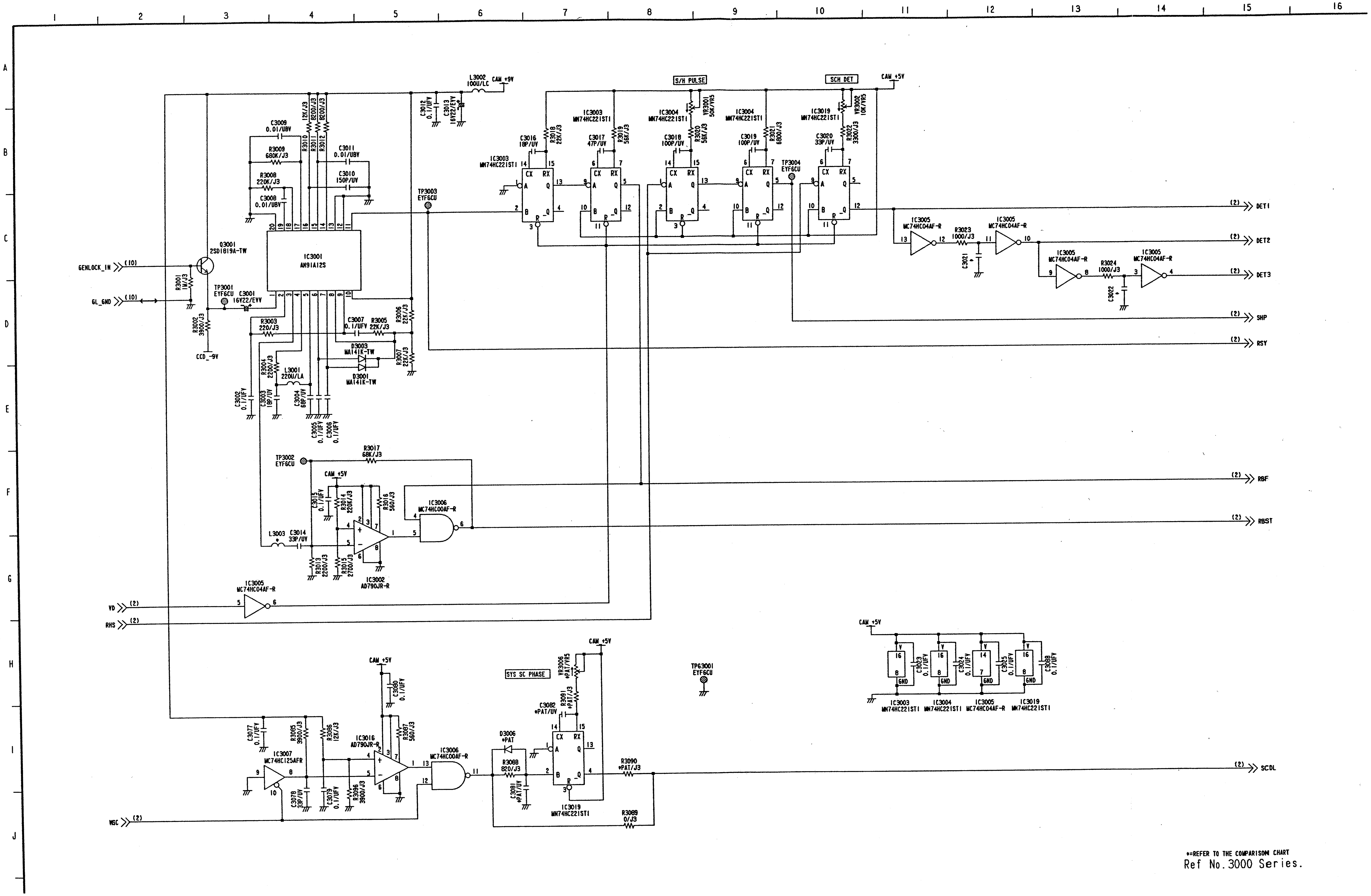
EVF BLOCK DIAGRAM


V DEF C. B. A.
EVF CONNECTOR
VJP2932
1 UNREG
2 GND
3 EVF Y
4 SAVE LED
5 TALLY LED
6 ZEBRA LED
7 GAIN LED
8 —
9 VTR WRN LED
10 BATT WRN LED
11 CHARA SW
12 AUDIO LED
(A)
(B)
(C)
(D)
(E)
(F)
①②③④⑤⑥⑦⑧⑨⑩⑪⑫
P7002
1 UNREG
2 GND
3 ZEBRA
4 CHARACTER
P7016
1 F-TALLY
2 ZEBRA
3 CHARACTER
4 +B
5 GND
6 VIDEO
7 SYNC SEPA
8 V-BLK
(G)
(H)
(I)
(J)
IC7001
Q7001~3
D7001
+8. 6V REG
+B
VR7001
TP7001
IC7003
+9V REG
D7003
C7010, R7017
SYNC TIP CLAMP
IC7002
PHASE COMP
SYNC SEPA
V. HOLD
VR7002
+B
HORIZONTAL OSC
HORIZONTAL DRIVE
V SYNC SEPA
VERTICAL OSC
V BLK
12
13
14
16
11
8
7
1
6
4
2
18
V. HOLD
VR7006
V. LIN
VR7003
V. SIZE
VR7004
Q7005
BUFFER
Q7006~8
VERTICAL DRIVE
TP7002
P7014
DY V(+) 1
DY V(-) 2
H. SIZE
VR7005
P7003
2 DEF +B
3 FB +B
4 GND
5 VD
6 HD
7 AFC
8 F TALLY
CN
P700
(A) 1 S
(C) 2 G
(D) 3 V
(E) 4 B
(F) 5 A
(B) 6 T
P7015
1 VIDEO
2 GND
CONTRAST
VR7301
Q7307~9
DL7301
PERKING AMP
PARKING
VR7303
Q7310~11
AMP
Q7303
CLAMP
P7004
6 VIDEO
7 SYNC SEPA
8 V-BLK
4 +B
3 CHARACTER
2 ZEBRA
1 F TALLY
(J)
(I)
(H)
(G)
+9V
IC7302
H. V BLK MIX
2
4
1
SW7302
SW7303
SW7301
P7004
G1 14
FBP 13
BRI VR(3) 11
BRI VR(2) 10
BRI VR(1) 9
BRIGHT
VR7302
6
5
3
2
1
FRONT C. B. A.



14
V(+) 1
V(-) 2
CN C. B. A.
CRT MASK C. B. A.
P7008
(A) 1 SAVE
(C) 2 GAIN
(D) 3 VTR WRN
(E) 4 BATT WRN
(F) 5 AUDIO
(B) 6 TALLY
QR7202 LED DRIVE
QR7203 LED DRIVE
QR7204 LED DRIVE
QR7205 LED DRIVE
QR7201 LED DRIVE
P7009
SAVE 1
GAIN 2
VTR WRN 3
BATT WRN 4
AUDIO 5
TALLY 6
D1 SAVE LED
D2 GAIN LED
D3 VTR WARNING LED
D4 BATTERY WARNING LED
D5 AUDIO LED
D6 TALLY LED
H. SIZE
VR7005
P7003
2 DEF +B
3 FB +B
4 GND
5 VD
6 HD
7 AFC
8 F TALLY
P7005
DEF +B 8
FB +B 7
GND 6
VD 5
HD 4
AFC 3
T7401(FBT)
10
HV
HV
DY7001
DY V
VR7402
FOCUS
4
1
2
8
9
Q7402
HIGH VOLTAGE
G3
P7011
G1 2
HEATER K 3
HEATER 4
G2 5
CRT SOCKET
CN7001
3 G1
4 HEATER K
5 HEATER
6 G2
1 G3
A
CRT7001
G1
CRT
G2 G3
04
1 14
BP 13
RI VR(3) 11
RI VR(2) 10
RI VR(1) 9
P7007
6 G1
5 FBP
3 BRI VR(3)
2 BRI VR(2)
1 BRI VR(1)
Q7403
H DRIVE
R7408
L7402
VR7403
SUB BR
DY7001
DY H
P7013
DY H(+) 1
DY H(-) 2
H DEF C. B. A.

PROCESS SCHEMATIC DIAGRAM 1／12（E15:Page CBA-10）


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
L3002 100U/LC
CAM_+9V
CAM_+5V
S/H PULSE
SCH DET
C3012 0.1/UFV
C3013 16V22/EVV
C3009 0.01/UBV
R3009 680K/J3
R3008 220K/J3
C3008 0.01/UBV
R3010 12K/J3
R3011 8200/J3
R3012 8200/J3
C3011 0.01/UBV
C3010 150P/UV
TP3003 EYF6CU
IC3001 AN91A12S
Q3001 2SD1819A-TW
GENLOCK_IN
GL_GND
(10)
R3001 1M/J3
TP3001 EYF6CU
C3001 16V22/EVV
R3002 3900/J3
CCD_-9V
R3003 220/J3
C3007 0.1/UFV
R3005 22K/J3
R3006 22K/J3
D3003 MA141K-TW
D3001 MA141K-TW
R3007 22K/J3
R3004 2200/J3
L3001 220U/LA
C3002 0.1/UFV
C3003 18P/UV
C3004 68P/UV
C3005 0.1/UFV
C3006 0.1/UFV
IC3003 MN74HC221ST1
C3016 18P/UV
R3018 22K/J3
C3017 47P/UV
R3019 56K/J3
IC3004 MN74HC221ST1
VR3001 50K/VR5
C3018 100P/UV
R3020 56K/J3
C3019 100P/UV
R3021 6800/J3
TP3004 EYF6CU
IC3019 MN74HC221ST1
VR3002 10K/VR5
C3020 33P/UV
R3022 3300/J3
CX
RX
A
B
Q
IC3005 MC74HC04AF-R
R3023 1000/J3
C3021
R3024 1000/J3
C3022
(2)
DET1
DET2
DET3
SHP
RSY
TP3002 EYF6CU
R3017 68K/J3
C3015 0.1/UFV
R3014 220K/J3
R3016 560/J3
IC3006 MC74HC00AF-R
L3003
C3014 33P/UV
R3013 2200/J3
R3015 2700/J3
IC3002 AD790JR-R
RBF
RBST
VD
RHS
SYS SC PHASE
VR3006 *PAT/VR5
R3091 *PAT/J3
C3082 *PAT/UV
TP63001 EYF6CU
C3080 0.1/UFV
C3077 0.1/UFV
R3085 3900/J3
R3086 12K/J3
IC3007 MC74HC125AFR
IC3016 AD790JR-R
R3087 560/J3
C3078 33P/UV
C3079 0.1/UFV
R3096 3900/J3
D3006 *PAT
R3088 820/J3
C3081 *PAT/UV
R3090 *PAT/J3
R3089 0/J3
SCDL
WSC
C3023 0.1/UFV
C3024 0.1/UFV
C3025 0.1/UFV
C3088 0.1/UFV
V
GND
16
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14
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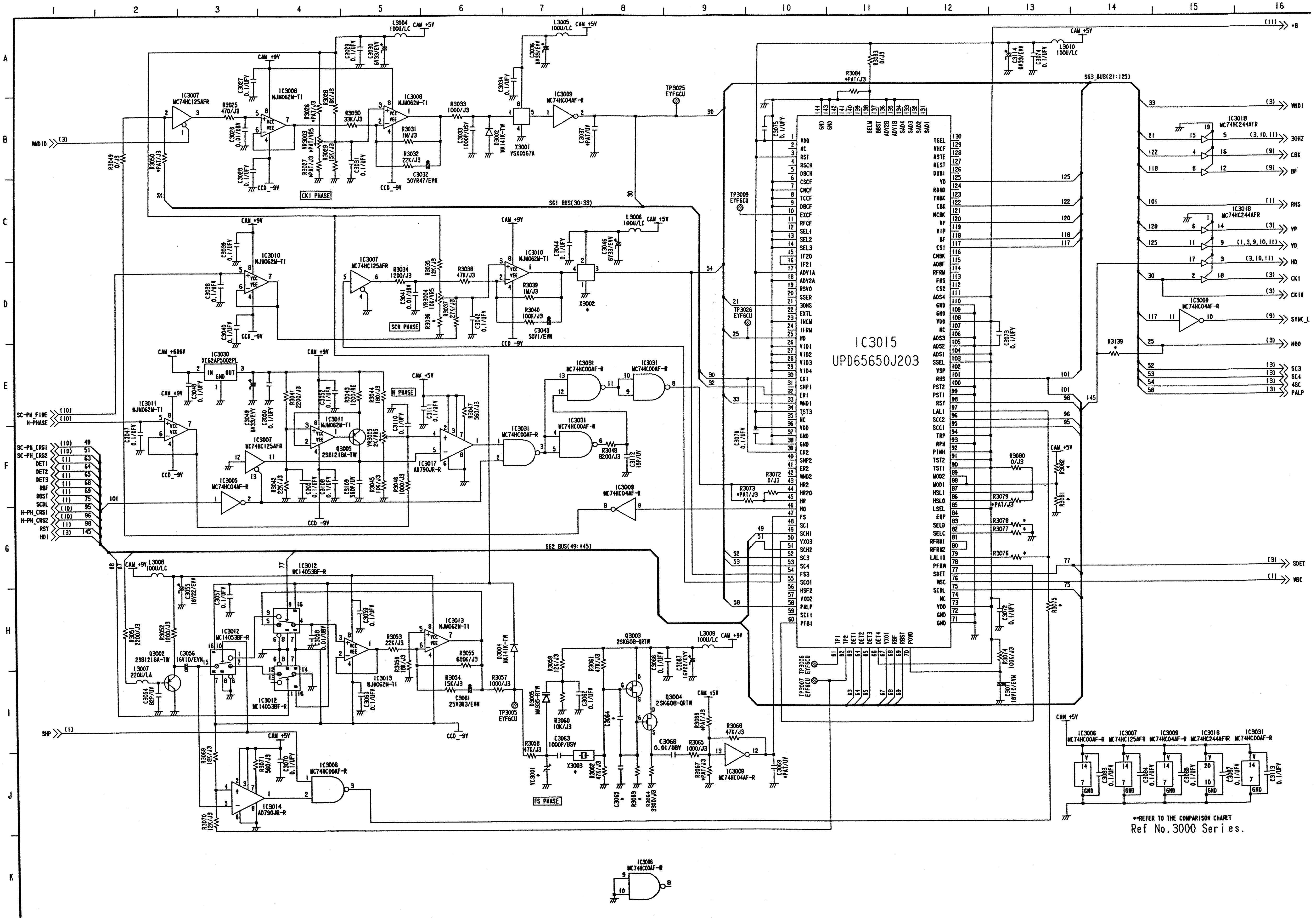
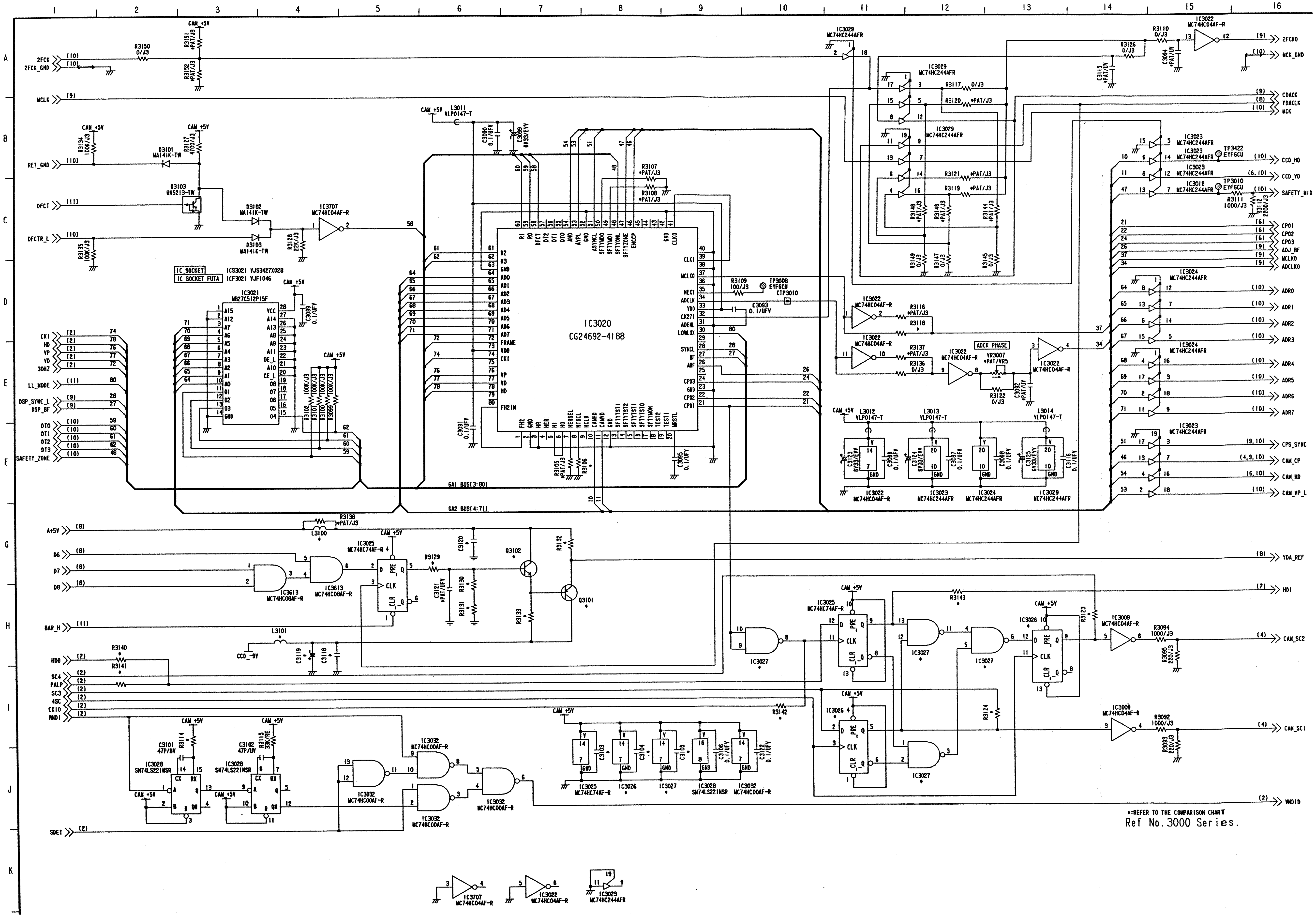
*=REFER TO THE COMPARISON CHART

Ref No.3000 Series.

PROCESS SCHEMATIC DIAGRAM 2／12 (E15:Page CBA-10)


IC3015
UPD65650J203
IC3007 MC74HC125AFR
IC3008 NJM062M-T1
IC3009 MC74HC04AF-R
IC3010 NJM062M-T1
IC3011 NJM062M-T1
IC3005 MC74HC04AF-R
IC3030 XC62AP5002PL
IC3031 MC74HC00AF-R
IC3017 AD790JR-R
IC3012 MC14053BF-R
IC3013 NJM062M-T1
IC3014 AD790JR-R
IC3006 MC74HC00AF-R
IC3018 MC74HC244AFR
Q3002 2SB1218A-TW
Q3003 2SK608-QRTW
Q3004 2SK608-QRTW
Q3005 2SB1218A-TW
X3001 VSX0567A
X3002
X3003
TP3025 EYF6CU
TP3009 EYF6CU
TP3026 EYF6CU
TP3005 EYF6CU
CK1 PHASE
SCH PHASE
H PHASE
FS PHASE
S61 BUS(30:33)
S62 BUS(49:145)
S63 BUS(21:125)
CAM +9V
CAM +5V
CAM +6R6V
CCD -9V
WHD1D
SC-PH_FINE
H-PHASE
SC-PH_CRS1
SC-PH_CRS2
DET1
DET2
DET3
RBF
RBST
SCDL
H-PH_CRS1
H-PH_CRS2
RSY
HD1
SHP
+B
WHD1
30HZ
CBK
BF
RHS
VP
VD
HD
CK1
CK10
SYNC_L
HD0
SC3
SC4
4SC
PALP
SDET
WSC
*=REFER TO THE COMPARISON CHART
Ref No.3000 Series.

PROCESS SCHEMATIC DIAGRAM 3／12（E15:Page CBA-10 ）


IC3020
CG24692-4188
IC3021
MB27C512P15F
IC SOCKET ICS3021 VJS3427X028
IC SOCKET FUTA ICF3021 VJF1046
IC3707 MC74HC04AF-R
IC3029 MC74HC244AFR
IC3022 MC74HC04AF-R
IC3023 MC74HC244AFR
IC3024 MC74HC244AFR
IC3018 MC74HC244AFR
IC3025 MC74HC74AF-R
IC3026
IC3027
IC3009 MC74HC04AF-R
IC3613 MC74HC08AF-R
IC3028 SN74LS221NSR
IC3032 MC74HC00AF-R
Q3101
Q3102
Q3103 UN5213-TW
D3101 MA141K-TW
D3102 MA141K-TW
D3103 MA141K-TW
L3011 VLP0147-T
L3012 VLP0147-T
L3013 VLP0147-T
L3014 VLP0147-T
L3100
L3101
TP3008 EYF6CU
TP3422 EYF6CU
TP3010 EYF6CU
CTP3010
VR3007
ADCK PHASE
GA1 BUS(3:80)
GA2 BUS(4:71)
CAM_+5V
CCD_-9V
2FCK
2FCK_GND
MCLK
RET_GND
DFCT
DFCTR_L
CK1
HD
VP
VD
30HZ
LL_MODE
DSP_SYNC_L
DSP_BF
DT0
DT1
DT2
DT3
SAFETY_ZONE
A+5V
D6
D7
D8
BAR_H
HD0
SC4
PALP
SC3
4SC
CK10
WND1
SDET
2FCKO
MCK_GND
CDACK
YDACLK
MCK
CCD_HD
CCD_VD
SAFETY_MIX
CP01
CP02
CP03
ADJ_BF
MCLKO
ADCLKO
ADR0
ADR1
ADR2
ADR3
ADR4
ADR5
ADR6
ADR7
CPS_SYNC
CAM_CP
CAM_HD
CAM_VP_L
YDA_REF
HD1
CAM_SC2
CAM_SC1
WND1D
1
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A
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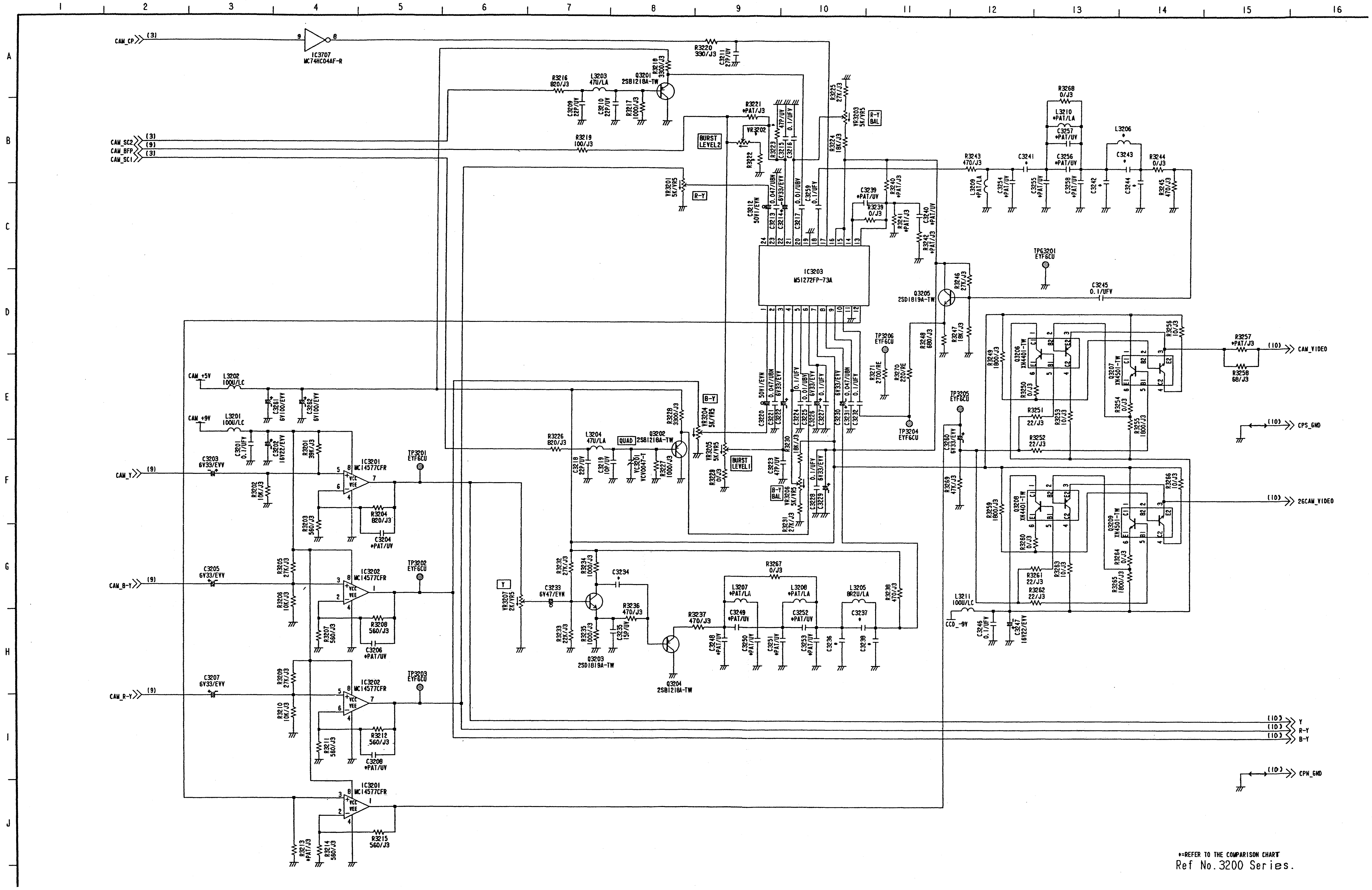
I
J
K

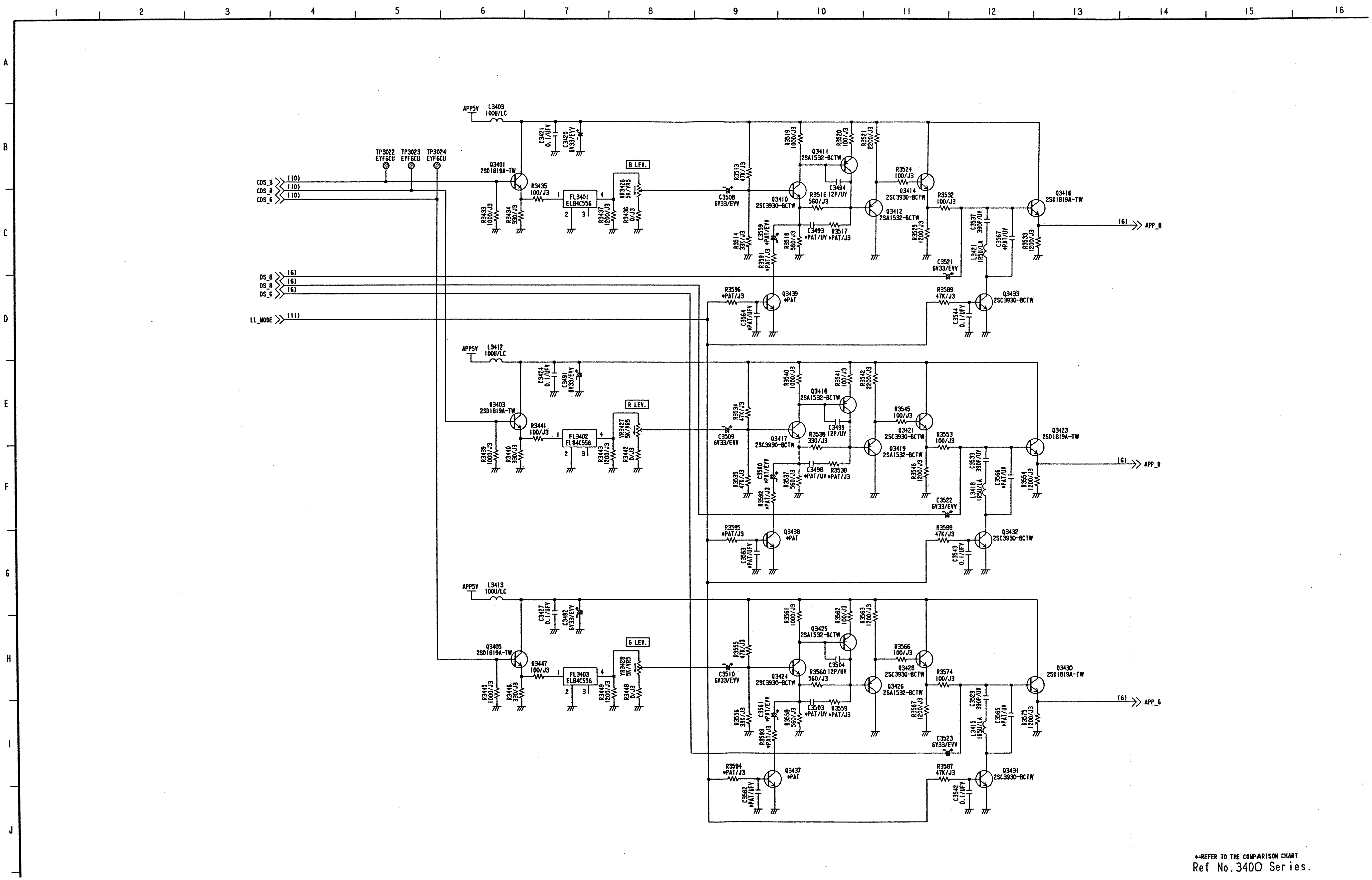
*=REFER TO THE COMPARISON CHART
Ref No.3000 Series.

PROCESS SCHEMATIC DIAGRAM 4／12（E15:Page CBA-10）


CAM_CP
IC3707
MC74HC04AF-R
R3220
330/J3
C3211
27P/UY
R3216
820/J3
L3203
47U/LA
Q3201
2SB1218A-TW
R3218
3300/J3
C3209
22P/UY
C3210
22P/UY
R3217
1000/J3
CAM_SC2
CAM_BFP
CAM_SC1
R3219
100/J3
R3221
*PAT/J3
BURST LEVEL2
VR3202
R3222
R3225
27K/J3
VR3203
5K/VR5
R-Y BAL
R3224
18K/J3
VR3201
5K/VR5
R-Y
C3212
50V1/EVN
IC3203
M51272FP-73A
C3239
*PAT/UY
R3239
0/J3
R3240
*PAT/J3
R3241
*PAT/J3
R3242
*PAT/J3
Q3205
2SD1819A-TW
R3246
27K/J3
R3247
18K/J3
R3248
680/J3
TP3206
EYF6CU
R3271
2700/RE
R3270
220/RE
TP3204
EYF6CU
R3268
0/J3
L3210
*PAT/LA
C3257
*PAT/UY
L3206
R3243
470/J3
C3241
C3256
*PAT/UY
C3243
R3244
0/J3
L3209
*PAT/LA
C3254
*PAT/UY
C3255
*PAT/UY
C3258
*PAT/UY
C3242
C3244
R3245
470/J3
TP63201
EYF6CU
C3245
0.1/UFV
R3249
1800/J3
Q3206
XN4401-TW
Q3207
XN4501-TW
R3250
0/J3
R3251
22/J3
R3252
22/J3
R3253
10/J3
R3254
0/J3
R3255
1800/J3
R3256
10/J3
R3257
*PAT/J3
R3258
68/J3
CAM_VIDEO
CPS_GND
TP3205
EYF6CU
C3260
6V33/EVV
R3269
47K/J3
R3259
1800/J3
Q3208
XN4401-TW
Q3209
XN4501-TW
R3260
0/J3
R3261
22/J3
R3262
22/J3
R3263
10/J3
R3264
0/J3
R3265
1800/J3
R3266
10/J3
2GCAM_VIDEO
L3211
100U/LC
CCD_-9V
C3246
0.1/UFY
C3247
16V22/EVV
CAM_+5V
L3202
100U/LC
C3261
6V100/EVV
C3262
6V100/EVV
CAM_+9V
L3201
100U/LC
C3201
0.1/UFY
C3202
16V22/EVV
R3201
390/J3
R3228
3300/J3
B-Y
VR3204
5K/VR5
R3226
820/J3
L3204
47U/LA
QUAD
Q3202
2SB1218A-TW
C3218
22P/UY
C3219
10P/UY
VC3201
VCV0047-T
R3227
1000/J3
VR3205
5K/VR5
BURST LEVEL1
R3229
0/J3
C3223
47P/UY
R3230
18K/J3
B-Y BAL
VR3206
5K/VR5
R3231
27K/J3
C3228
C3229
C3203
6V33/EVV
CAM_Y
IC3201
MC14577CFR
TP3201
EYF6CU
R3202
10K/J3
R3203
560/J3
R3204
820/J3
C3204
*PAT/UY
C3205
6V33/EVV
CAM_B-Y
R3205
27K/J3
R3206
10K/J3
IC3202
MC14577CFR
TP3202
EYF6CU
R3207
560/J3
R3208
560/J3
C3206
*PAT/UY
Y
VR3207
2K/VR5
C3233
6V47/EVN
R3232
27K/J3
R3234
1000/J3
C3234
R3233
22K/J3
R3235
1000/J3
C3235
15P/UY
R3236
470/J3
Q3203
2SD1819A-TW
R3237
470/J3
Q3204
2SB1218A-TW
R3267
0/J3
L3207
*PAT/LA
L3208
*PAT/LA
L3205
8R2U/LA
C3249
*PAT/UY
C3252
*PAT/UY
C3237
R3238
470/J3
C3248
*PAT/UY
C3250
*PAT/UY
C3251
*PAT/UY
C3253
*PAT/UY
C3236
C3238
C3207
6V33/EVV
CAM_R-Y
R3209
27K/J3
R3210
10K/J3
IC3202
MC14577CFR
TP3203
EYF6CU
R3211
560/J3
R3212
560/J3
C3208
*PAT/UY
IC3201
MC14577CFR
R3213
*PAT/J3
R3214
560/J3
R3215
560/J3
Y
R-Y
B-Y
CPN_GND

*=REFER TO THE COMPARISON CHART
Ref No.3200 Series.

PROCESS SCHEMATIC DIAGRAM 5／12（E15:Page CBA-10 ）



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G
H
I
J
APP5V
L3403
100U/LC
C3421
0.1/UFV
C3420
6Y33/EVY
TP3022
EYF6CU
TP3023
EYF6CU
TP3024
EYF6CU
Q3401
2SD1819A-TW
CDS_B
CDS_R
CDS_G
(10)
R3435
100/J3
FL3401
ELB4C556
R3433
1000/J3
R3434
330/J3
R3437
1200/J3
B LEV.
VR3426
5K/VR5
R3436
0/J3
C3508
6Y33/EVY
R3513
47K/J3
R3514
33K/J3
R3519
1000/J3
R3520
100/J3
R3521
2200/J3
Q3411
2SA1532-BCTW
Q3410
2SC3930-BCTW
R3518
560/J3
C3494
12P/UV
C3493
*PAT/UV
R3517
*PAT/J3
R3516
560/J3
C3559
*PAT/EVY
R3591
*PAT/J3
Q3412
2SA1532-BCTW
R3524
100/J3
Q3414
2SC3930-BCTW
R3532
100/J3
R3525
1200/J3
C3521
6Y33/EVY
L3421
1R5U/LA
C3537
390P/UV
C3567
*PAT/UV
R3533
1200/J3
Q3416
2SD1819A-TW
(6)
APP_B
DS_B
DS_R
DS_G
(6)
LL_MODE
(11)
R3596
*PAT/J3
C3564
*PAT/UFV
Q3439
*PAT
R3589
47K/J3
C3544
0.1/UFV
Q3433
2SC3930-BCTW
APP5V
L3412
100U/LC
C3424
0.1/UFV
C3491
6Y33/EVY
Q3403
2SD1819A-TW
R3441
100/J3
FL3402
ELB4C556
R3439
1000/J3
R3440
330/J3
R3443
1200/J3
R LEV.
VR3427
5K/VR5
R3442
0/J3
C3509
6Y33/EVY
R3534
47K/J3
R3535
47K/J3
R3540
1000/J3
R3541
100/J3
R3542
2200/J3
Q3418
2SA1532-BCTW
Q3417
2SC3930-BCTW
R3539
330/J3
C3499
12P/UV
C3498
*PAT/UV
R3538
*PAT/J3
R3537
560/J3
C3560
*PAT/EVY
R3592
*PAT/J3
R3545
100/J3
Q3421
2SC3930-BCTW
Q3419
2SA1532-BCTW
R3553
100/J3
R3546
1200/J3
C3522
6Y33/EVY
L3418
1R5U/LA
C3533
390P/UV
C3566
*PAT/UV
R3554
1200/J3
Q3423
2SD1819A-TW
(6)
APP_R
R3595
*PAT/J3
C3563
*PAT/UFV
Q3438
*PAT
R3588
47K/J3
C3543
0.1/UFV
Q3432
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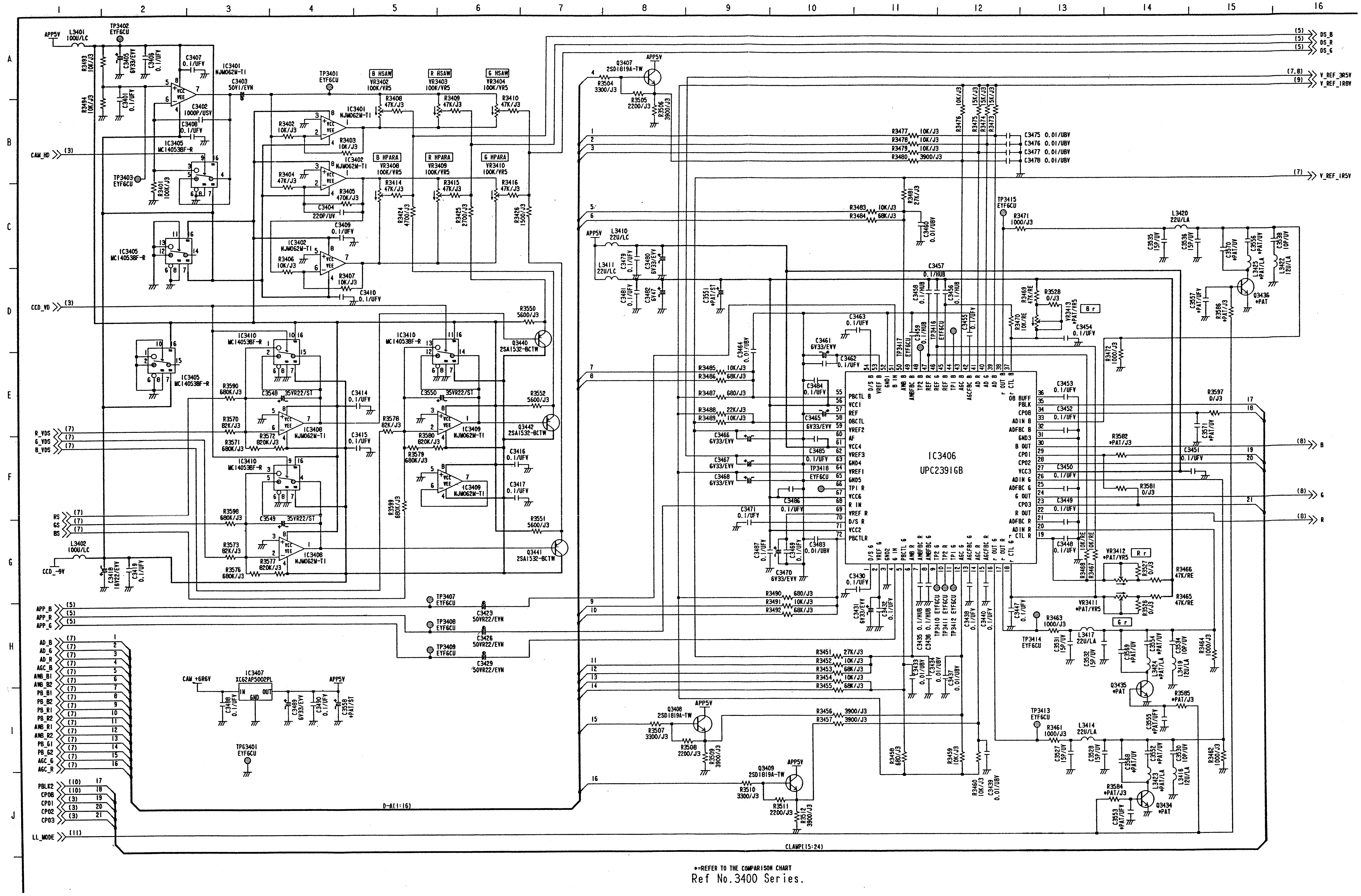
APP5V
L3413
100U/LC
C3427
0.1/UFV
C3492
6Y33/EVY
Q3405
2SD1819A-TW
R3447
100/J3
FL3403
ELB4C556
R3445
1000/J3
R3446
330/J3
R3449
1200/J3
G LEV.
VR3428
5K/VR5
R3448
0/J3
C3510
6Y33/EVY
R3555
47K/J3
R3556
39K/J3
R3561
1000/J3
R3562
100/J3
R3563
1200/J3
Q3425
2SA1532-BCTW
Q3424
2SC3930-BCTW
R3560
560/J3
C3504
12P/UV
C3503
*PAT/UV
R3559
*PAT/J3
R3558
560/J3
C3561
*PAT/EVY
R3593
*PAT/J3
R3566
100/J3
Q3428
2SC3930-BCTW
Q3426
2SA1532-BCTW
R3574
100/J3
R3567
1200/J3
C3523
6Y33/EVY
L3415
1R5U/LA
C3529
390P/UV
C3565
*PAT/UV
R3575
1200/J3
Q3430
2SD1819A-TW
(6)
APP_G
R3594
*PAT/J3
C3562
*PAT/UFV
Q3437
*PAT
R3587
47K/J3
C3542
0.1/UFV
Q3431
2SC3930-BCTW

*=REFER TO THE COMPARISON CHART
Ref No.3400 Series.

PROCESS SCHEMATIC DIAGRAM 6／12（E15:Page CBA-10 ）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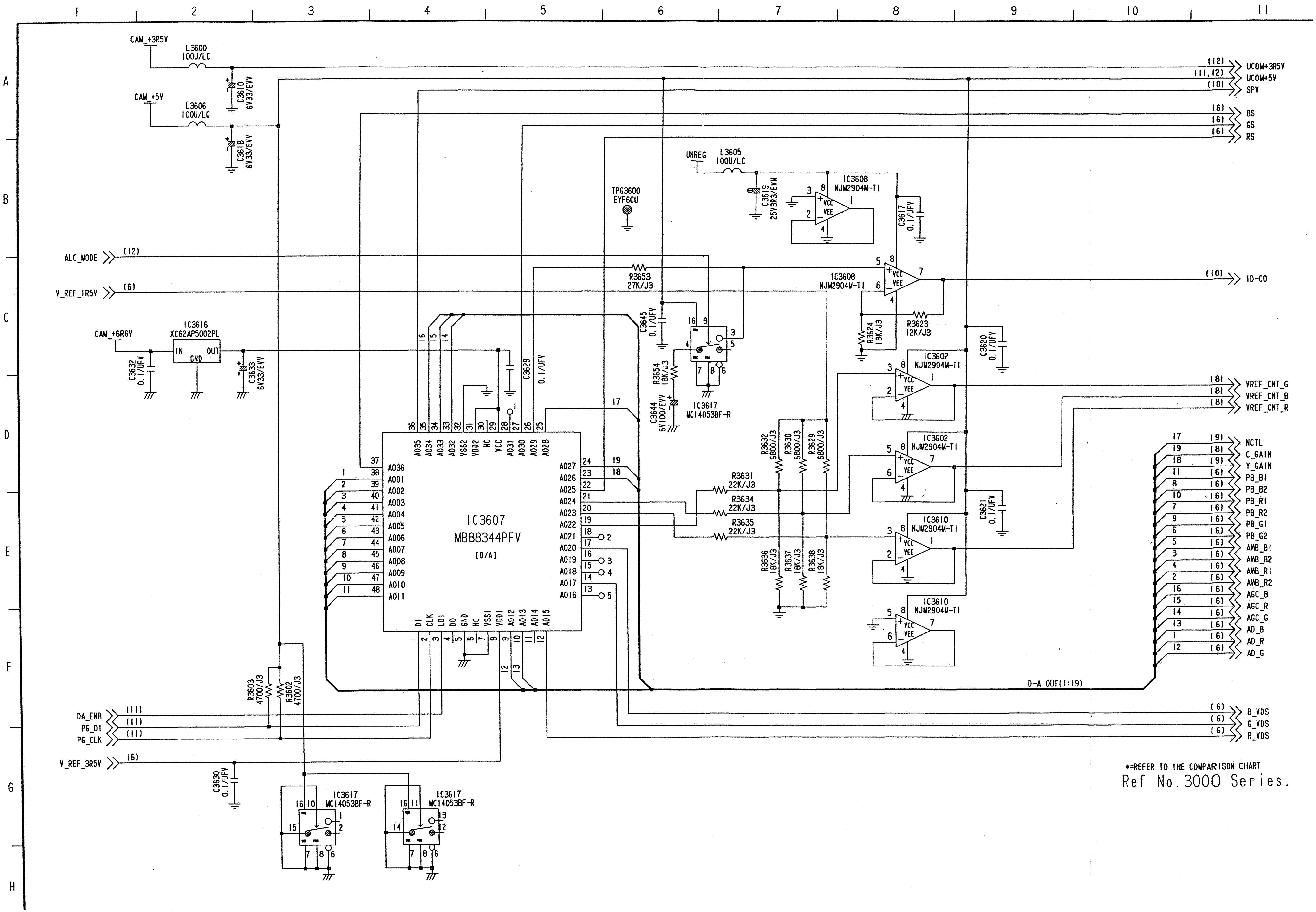
H
I
J
APP5V
L3401 100U/LC
TP3402 EYF6CU
IC3401 NJM062M-T1
IC3405 MC14053BF-R
IC3402 NJM062M-T1
IC3410 MC14053BF-R
IC3408 NJM062M-T1
IC3409 NJM062M-T1
IC3407 XC62AP5002PL
IC3406
UPC2391GB
CAM_HD
CCD_VD
R_VDS
G_VDS
B_VDS
RS
GS
BS
L3402 100U/LC
CCD_-9V
APP_B
APP_R
APP_G
AD_B
AD_G
AD_R
AGC_B
ANB_B1
ANB_B2
PB_B1
PB_B2
PB_R1
PB_R2
ANB_R1
ANB_R2
PB_G1
PB_G2
AGC_G
AGC_R
PBLK2
CP0B
CP01
CP02
CP03
LL_MODE
CAM_+6R6V
TP63401 EYF6CU
B HSAW
R HSAW
G HSAW
B HPARA
R HPARA
G HPARA
VR3402 100K/VR5
VR3403 100K/VR5
VR3404 100K/VR5
VR3408 100K/VR5
VR3409 100K/VR5
VR3410 100K/VR5
Q3440 2SA1532-BCTW
Q3442 2SA1532-BCTW
Q3441 2SA1532-BCTW
Q3407 2SD1819A-TW
Q3408 2SD1819A-TW
Q3409 2SD1819A-TW
Q3436 *PAT
Q3435 *PAT
Q3434 *PAT
TP3407 EYF6CU
TP3408 EYF6CU
TP3409 EYF6CU
TP3415 EYF6CU
TP3414 EYF6CU
TP3413 EYF6CU
DS_B
DS_R
DS_G
V_REF_3R5V
V_REF_1R8V
V_REF_1R5V
B
G
R
B r
R r
G r
VR3413 *PAT/VR5
VR3412 *PAT/VR5
VR3411 *PAT/VR5
L3420 22U/LA
L3417 22U/LA
L3414 22U/LA
D-A(1:16)
CLAMP(15:24)

*=REFER TO THE COMPARISON CHART

Ref No.3400 Series.

PROCESS SCHEMATIC DIAGRAM 7／12 (E15:Page CBA-10)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A
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C
D
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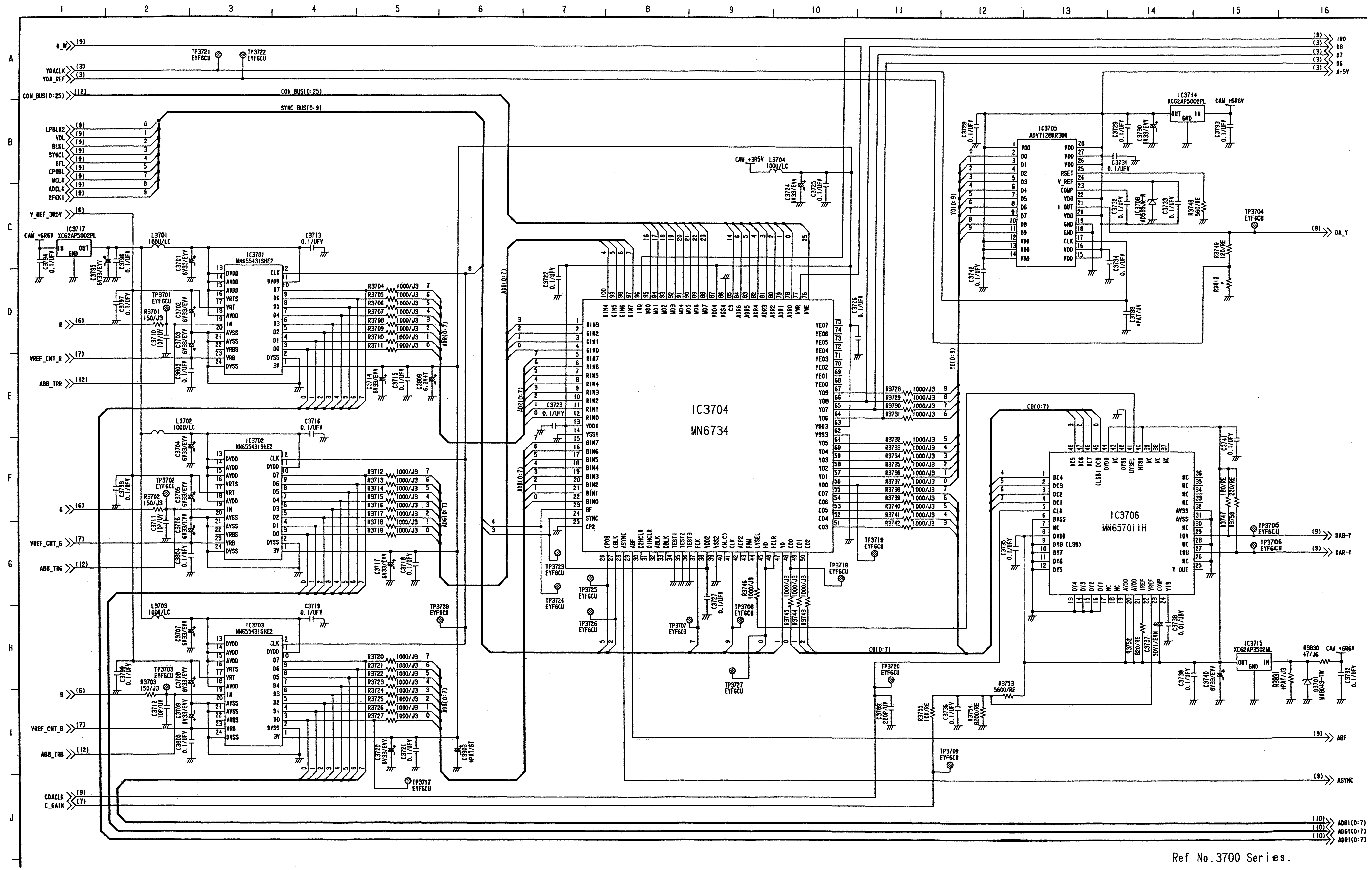
G
H
CAM_+3R5V
L3600
100U/LC
C3610
6V33/EVV
CAM_+5V
L3606
100U/LC
C3618
6V33/EVV
(12) UCOM+3R5V
(11,12) UCOM+5V
(10) SPV
(6) BS
(6) GS
(6) RS
UNREG
L3605
100U/LC
C3619
25V3R3/EVN
IC3608
NJM2904M-T1
C3617
0.1/UFV
TPG3600
EYF6CU
ALC_MODE (12)
V_REF_1R5V (6)
R3653
27K/J3
IC3608
NJM2904M-T1
(10) ID-CO
R3624
18K/J3
R3623
12K/J3
C3645
0.1/UFV
R3654
18K/J3
C3644
6V100/EVV
IC3617
MC14053BF-R
CAM_+6R6V
IC3616
XC62AP5002PL
IN
OUT
GND
C3632
0.1/UFV
C3633
6V33/EVV
C3629
0.1/UFV
C3620
0.1/UFV
IC3602
NJM2904M-T1
(8) VREF_CNT_G
(8) VREF_CNT_B
(8) VREF_CNT_R
R3632
6800/J3
R3630
6800/J3
R3629
6800/J3
R3631
22K/J3
R3634
22K/J3
R3635
22K/J3
R3636
18K/J3
R3637
18K/J3
R3638
18K/J3
IC3602
NJM2904M-T1
C3621
0.1/UFV
IC3610
NJM2904M-T1
IC3610
NJM2904M-T1
IC3607
MB88344PFV
[D/A]
A035 A034 A033 A032 VSS2 VDD2 NC VCC A031 A030 A029 A028
A036 A001 A002 A003 A004 A005 A006 A007 A008 A009 A010 A011
A027 A026 A025 A024 A023 A022 A021 A020 A019 A018 A017 A016
DI CLK LDI DO GND NC VSS1 VDD1 A012 A013 A014 A015
(9) NCTL
(8) C_GAIN
(9) Y_GAIN
(6) PB_B1
(6) PB_B2
(6) PB_R1
(6) PB_R2
(6) PB_G1
(6) PB_G2
(6) AWB_B1
(6) AWB_B2
(6) AWB_R1
(6) AWB_R2
(6) AGC_B
(6) AGC_R
(6) AGC_G
(6) AD_B
(6) AD_R
(6) AD_G
D-A OUT(1:19)
DA_ENB (11)
PG_DI (11)
PG_CLK (11)
R3603
4700/J3
R3602
4700/J3
(6) B_VDS
(6) G_VDS
(6) R_VDS
V_REF_3R5V (6)
C3630
0.1/UFV
IC3617
MC14053BF-R
IC3617
MC14053BF-R
*=REFER TO THE COMPARISON CHART

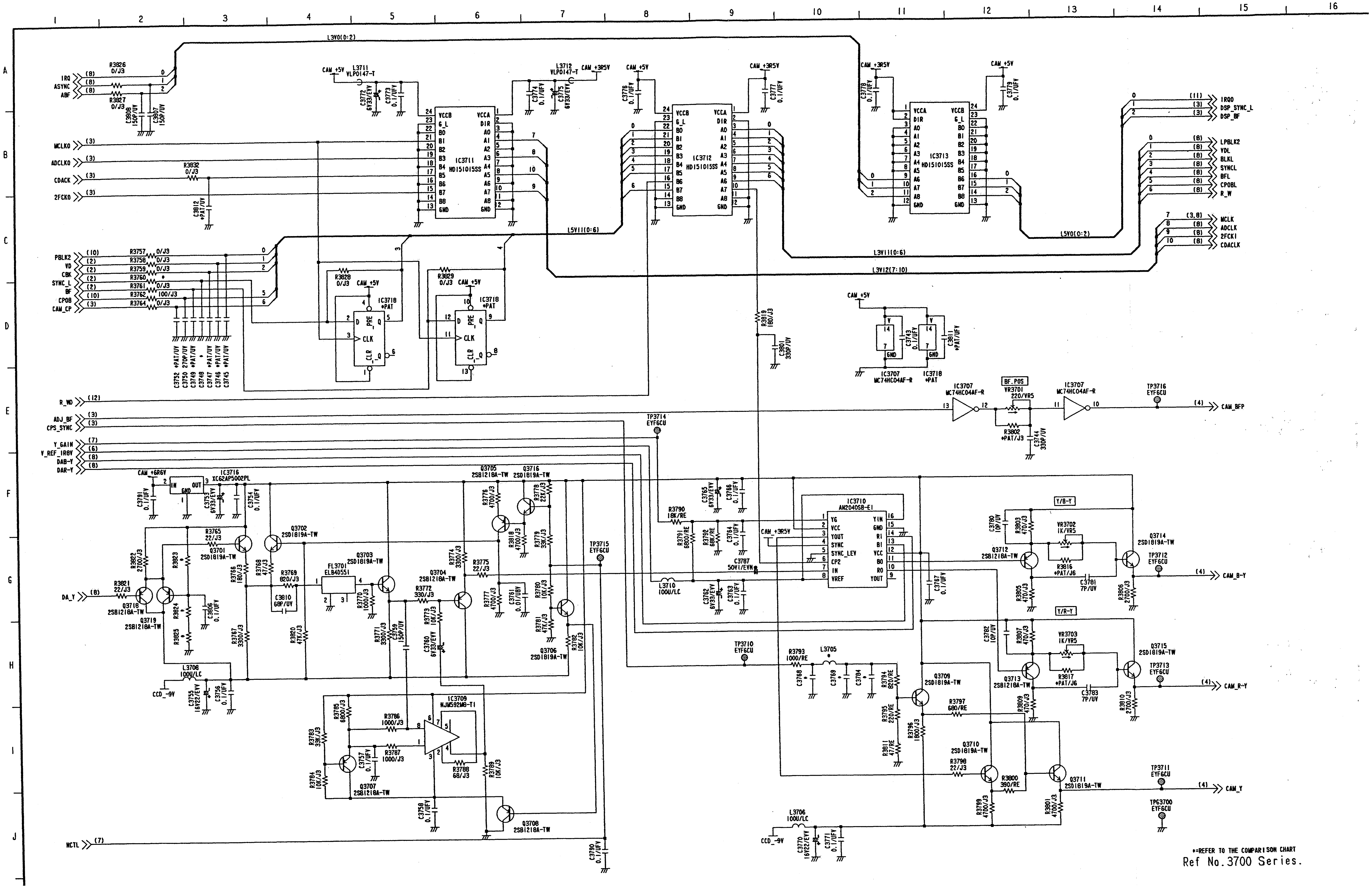
Ref No.3000 Series.

PROCESS SCHEMATIC DIAGRAM 8／12（E15:Page CBA-10 ）


R_W
YDACLK
YDA_REF
COM_BUS(0:25)
LPBLK2
VDL
BLKL
SYNCL
BFL
CPOBL
MCLK
ADCLK
2FCK1
V_REF_3R5V
CAM +6R6V
IC3717
XC62AP5002PL
L3701
100U/LC
IC3701
MN65543ISHE2
C3713
0.1/UFV
TP3701
EYF6CU
R3701
150/J3
R
VREF_CNT_R
ABB_TRR
L3702
100U/LC
IC3702
MN65543ISHE2
C3716
0.1/UFV
TP3702
EYF6CU
R3702
150/J3
G
VREF_CNT_G
ABB_TRG
L3703
100U/LC
IC3703
MN65543ISHE2
C3719
0.1/UFV
TP3703
EYF6CU
R3703
150/J3
B
VREF_CNT_B
ABB_TRB
CDACLK
C_GAIN
TP3721
EYF6CU
TP3722
EYF6CU
COM BUS(0:25)
SYNC BUS(0:9)
ADR(0:7)
ADG(0:7)
ADB(0:7)
IC3704
MN6734
CAM +3R5V
L3704
100U/LC
C3724
6V33/EVV
C3725
0.1/UFV
IC3705
ADV7128KR30R
IC3714
XC62AP5002PL
CAM +6R6V
TP3704
EYF6CU
DA_Y
R3749
120/RE
R3812
YO(0:9)
CO(0:7)
IC3706
MN65701IH
TP3705
EYF6CU
TP3706
EYF6CU
DAB-Y
DAR-Y
IC3715
XC62AP3502ML
R3830
47/J6
CAM +6R6V
D3701
MA8043-TW
R3753
5600/RE
TP3718
EYF6CU
TP3719
EYF6CU
TP3720
EYF6CU
TP3709
EYF6CU
TP3723
EYF6CU
TP3724
EYF6CU
TP3725
EYF6CU
TP3726
EYF6CU
TP3707
EYF6CU
TP3708
EYF6CU
TP3727
EYF6CU
TP3728
EYF6CU
TP3717
EYF6CU
IRQ
D8
D7
D6
A+5V
ABF
ASYNC
ADB1(0:7)
ADG1(0:7)
ADR1(0:7)

Ref No.3700 Series.

PROCESS SCHEMATIC DIAGRAM 9／12（E15:Page CBA-10 ）


1
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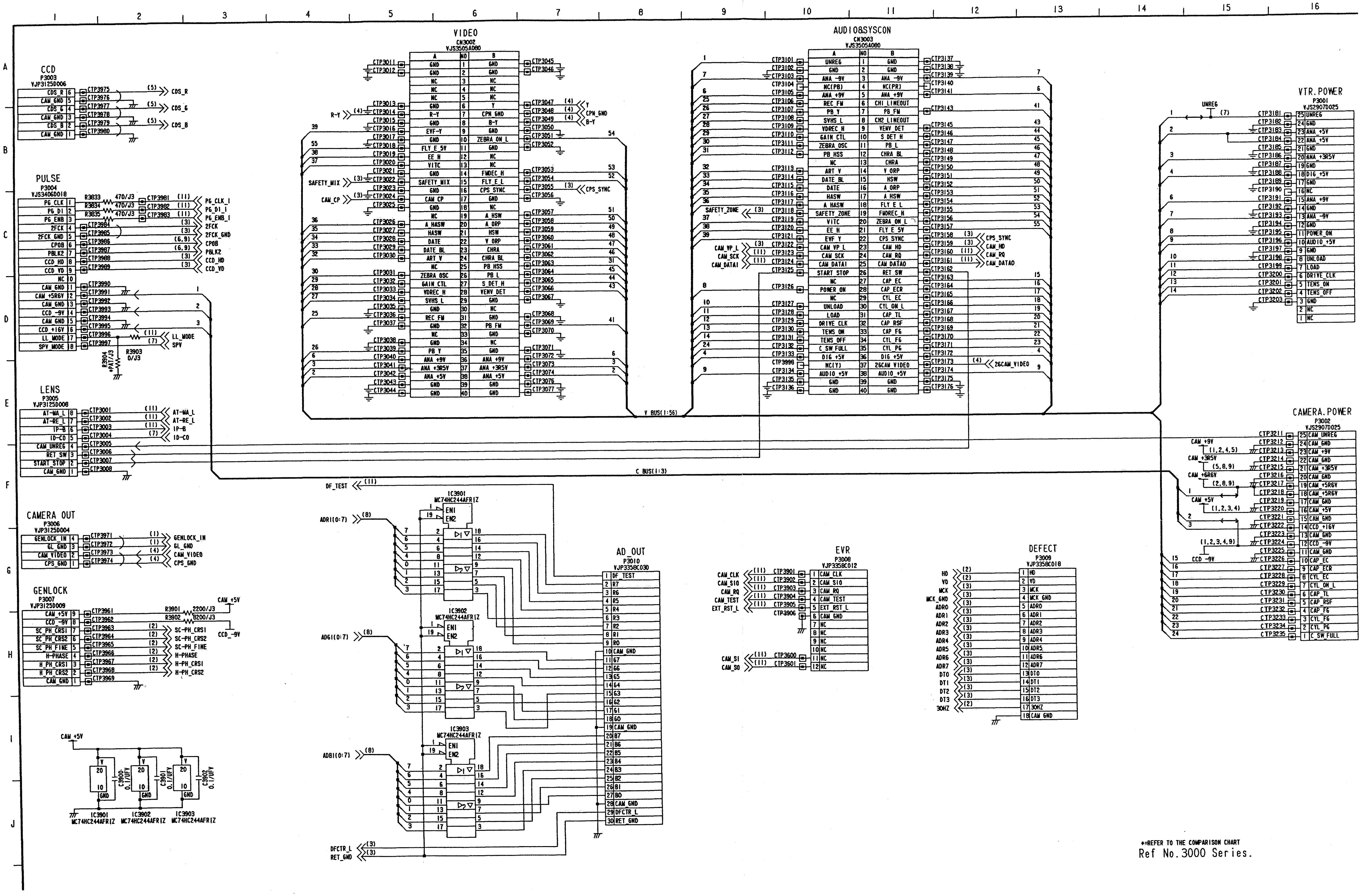
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
L3V0(0:2)
L5V1(0:6)
L5V0(0:2)
L3V1(0:6)
L3V2(7:10)
IRQ
ASYNC
ABF
R3826 0/J3
R3827 0/J3
C3806 150P/UV
C3807 150P/UV
MCLKO
ADCLKO
CDACK
2FCKO
R3832 0/J3
C3812 *PAT/UV
CAM_+5V
L3711 VLP0147-T
C3772 6V33/EVV
C3773 0.1/UFV
IC3711 HD151015SS
L3712 VLP0147-T
CAM_+3R5V
C3774 0.1/UFV
C3775 6V33/EVV
C3776 0.1/UFV
IC3712 HD151015SS
C3777 0.1/UFV
C3778 0.1/UFV
C3779 0.1/UFV
IC3713 HD151015SS
VCCB
VCCA
G_L
DIR
B0
B1
B2
B3
B4
B5
B6
B7
B8
A0
A1
A2
A3
A4
A5
A6
A7
A8
GND
IRQ0
DSP_SYNC_L
DSP_BF
LPBLK2
YDL
BLKL
SYNCL
BFL
CPOBL
R_W
MCLK
ADCLK
2FCKI
CDACLK
PBLK2
VD
CBK
SYNC_L
BF
CPOB
CAM_CP
R3757 0/J3
R3758 0/J3
R3759 0/J3
R3760 *
R3761 0/J3
R3762 100/J3
R3764 0/J3
C3752 *PAT/UV
C3750 270P/UV
C3749 *PAT/UV
C3748 *
C3747 *PAT/UV
C3746 *PAT/UV
C3745 *PAT/UV
R3828 0/J3
IC3718 *PAT
R3829 0/J3
PRE
CLR
CLK
R3819 180/J3
C3801 330P/UV
IC3707 MC74HC04AF-R
IC3718 *PAT
R_WD
ADJ_BF
CPS_SYNC
Y_GAIN
V_REF_IR6V
DAB-Y
DAR-Y
TP3714 EYF6CU
BF.POS
VR3701 220/VR5
R3802 *PAT/J3
C3744 330P/UV
TP3716 EYF6CU
CAM_BFP
CAM_+6R6V
IC3716 XC62AP5002PL
C3791 0.1/UFV
C3753 6V33/EVV
C3754 0.1/UFV
R3765 22/J3
Q3701 2SD1819A-TW
Q3702 2SD1819A-TW
R3822 2700/J3
R3823
R3821 22/J3
DA_Y
Q3716 2SB1218A-TW
Q3719 2SB1218A-TW
R3824
C3806 0.1/UFV
R3825
R3766 180/J3
R3768 47/J3
R3769 820/J3
C3810 68P/UV
R3767 3300/J3
R3820 47K/J3
FL3701 ELB40551
Q3703 2SD1819A-TW
R3770 1000/J3
R3771 3300/J3
C3759 150P/UV
R3774 3300/J3
Q3704 2SB1218A-TW
R3772 330/J3
R3773 10K/J3
C3760 6V33/EVV
R3775 22/J3
R3776 4700/J3
Q3705 2SB1218A-TW
Q3716 2SD1819A-TW
R3778 22K/J3
R3818 4700/J3
R3779 33K/J3
R3777 4700/J3
C3761 0.01/UBV
R3780 10K/J3
R3781 47K/J3
R3782 10K/J3
Q3706 2SD1819A-TW
TP3715 EYF6CU
L3708 100U/LC
CCD_-9V
C3755 16V22/EVV
C3756 0.1/UFV
IC3709 NJM592M8-T1
R3785 6800/J3
R3786 1000/J3
R3783 33K/J3
R3787 1000/J3
C3757 0.1/UFV
R3784 10K/J3
Q3707 2SB1218A-TW
R3788 68/J3
R3789 10K/J3
C3758 0.1/UFV
Q3708 2SB1218A-TW
NCTL
C3790 0.1/UFV
C3765 6V33/EVV
C3766 0.1/UFV
R3790 18K/RE
R3791 6800/RE
R3792 68K/RE
C3764 0.1/UFV
C3787 50V1/EVN
L3710 100U/LC
C3762 6V33/EVV
C3763 0.1/UFV
IC3710 AN2040SB-E1
YG
VCC
YOUT
SYNC
SYNC_LEV
CP2
IN
VREF
YIN
GND
RI
BI
BO
RO
C3767 0.1/UFV
TP3710 EYF6CU
R3793 1000/RE
L3705
C3768
C3769
C3784
R3794 820/RE
Q3709 2SD1819A-TW
R3797 680/RE
R3795 220/RE
R3796 1800/J3
R3811 47/RE
Y/B-Y
C3780 10P/UV
R3803 470/J3
VR3702 1K/VR5
Q3712 2SB1218A-TW
R3816 *PAT/J6
C3781 7P/UV
R3805 470/J3
R3806 2700/J3
Q3714 2SD1819A-TW
TP3712 EYF6CU
CAM_B-Y
Y/R-Y
C3782 10P/UV
R3807 470/J3
VR3703 1K/VR5
Q3713 2SB1218A-TW
R3817 *PAT/J6
C3783 7P/UV
R3809 470/J3
R3810 2700/J3
Q3715 2SD1819A-TW
TP3713 EYF6CU
CAM_R-Y
Q3710 2SD1819A-TW
R3798 22/J3
R3800 390/RE
Q3711 2SD1819A-TW
R3799 4700/J3
R3801 4700/J3
TP3711 EYF6CU
TP63700 EYF6CU
CAM_Y
L3706 100U/LC
C3770 16V22/EVV
C3771 0.1/UFV

*=REFER TO THE COMPARISON CHART

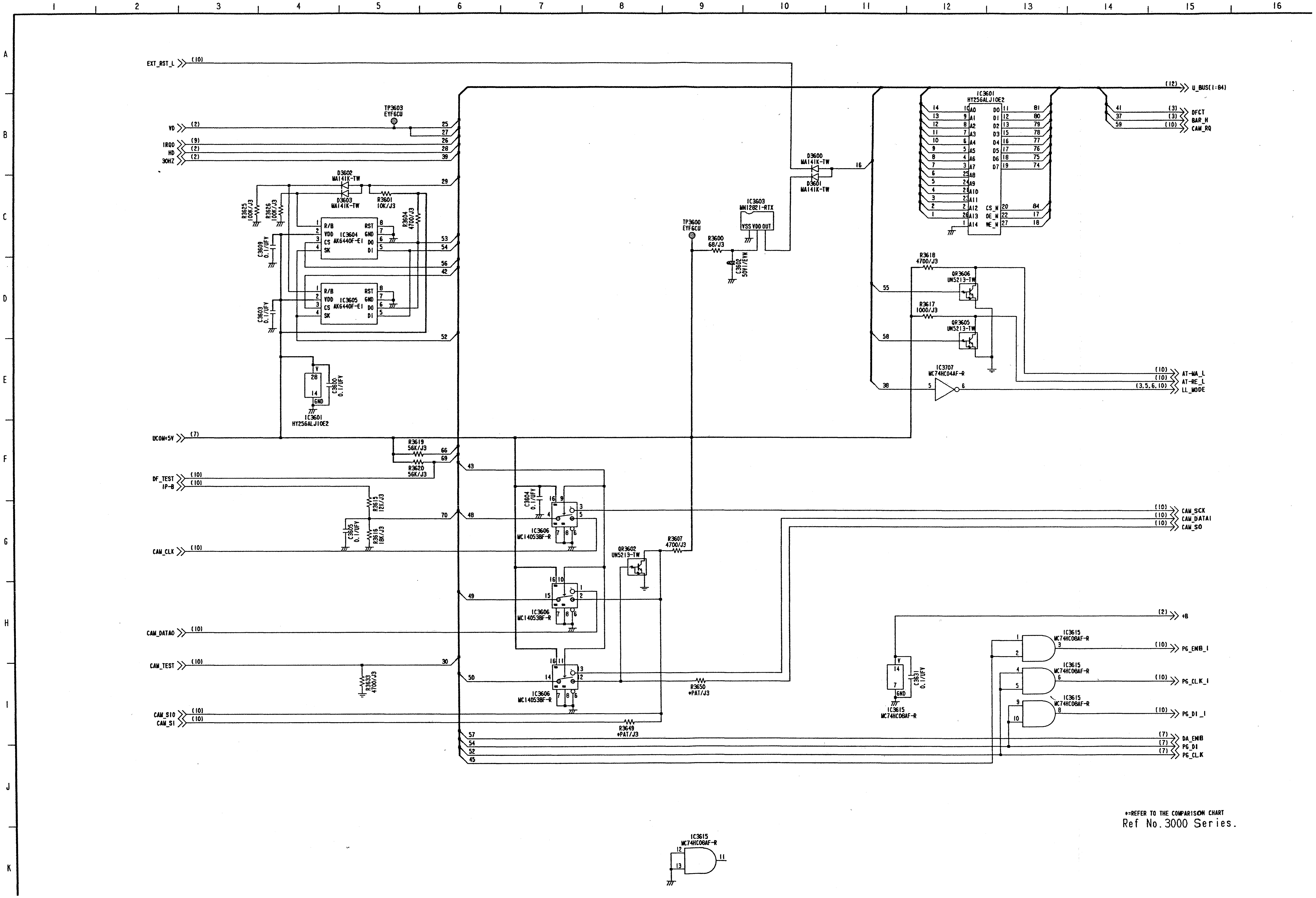
Ref No.3700 Series.

PROCESS SCHEMATIC DIAGRAM 10／12 (E15:Page CBA-10)


CCD
P3003
VJP3125D006
PULSE
P3004
VJS3406D018
LENS
P3005
VJP3125D008
CAMERA OUT
P3006
VJP3125D004
GENLOCK
P3007
VJP3125D009
VIDEO
CN3002
VJS3505A080
AUDIO&SYSCON
CN3003
VJS3505A080
VTR.POWER
P3001
VJS2907D025
CAMERA.POWER
P3002
VJS2907D025
AD_OUT
P3010
VJP3358C030
EVR
P3008
VJP3358C012
DEFECT
P3009
VJP3358C018
IC3901
MC74HC244AFR1Z
IC3902
MC74HC244AFR1Z
IC3903
MC74HC244AFR1Z
V BUS(1:56)
C BUS(1:3)
ADR1(0:7)
ADG1(0:7)
ADB1(0:7)
DF_TEST
DFCTR_L
RET_GND
CAM_+5V
C3900 0.1/UFY
C3901 0.1/UFY
C3902 0.1/UFY
R3903 0/J3
R3904 *PAT/J3

*=REFER TO THE COMPARISON CHART
Ref No.3000 Series.

PROCESS SCHEMATIC DIAGRAM 11／12（E15:Page CBA-10）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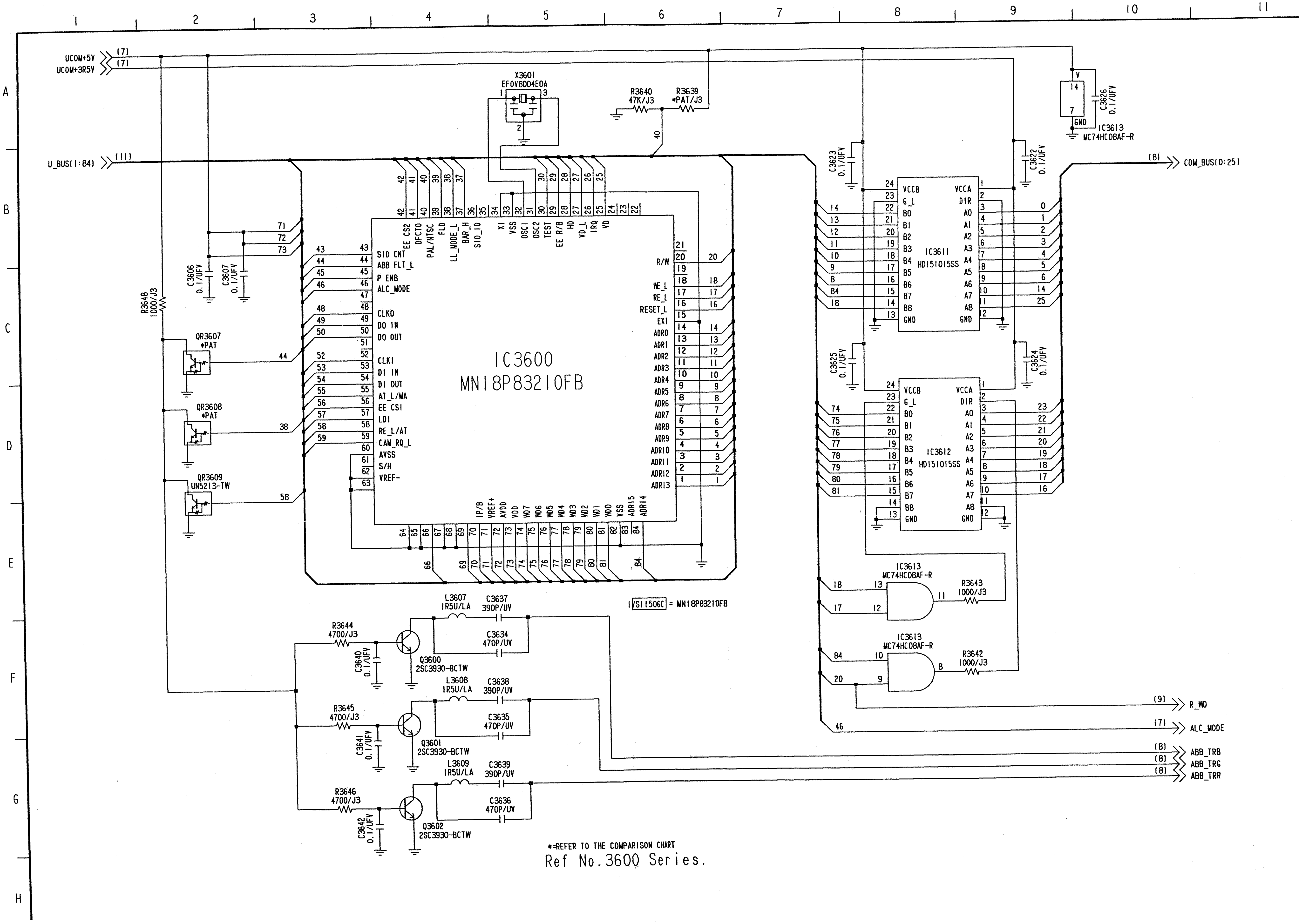
15
16
A
B
C
D
E
F
G
H
I
J
K
EXT_RST_L (10)
VD (2)
IRQ0 (9)
HD (2)
30HZ (2)
TP3603 EYF6CU
25
27
26
28
39
29
D3602 MA141K-TW
D3603 MA141K-TW
R3601 10K/J3
R3625 100K/J3
R3626 100K/J3
R3604 4700/J3
IC3604 AK6440F-E1
R/B
VDD
CS
SK
RST
GND
DO
DI
C3609 0.1/UFV
53
54
56
42
IC3605 AK6440F-E1
C3603 0.1/UFV
52
V
28
14
GND
C3600 0.1/UFV
IC3601 HY256ALJ10E2
UCOM+5V (7)
R3619 56K/J3
R3620 56K/J3
66
69
43
DF_TEST (10)
IP-B (10)
R3615 12K/J3
R3616 18K/J3
C3605 0.1/UFV
70
48
CAM_CLK (10)
C3604 0.1/UFV
IC3606 MC14053BF-R
49
CAM_DATA0 (10)
CAM_TEST (10)
30
R3633 4700/J3
50
CAM_SI0 (10)
CAM_SI (10)
R3649 *PAT/J3
R3650 *PAT/J3
57
54
52
45
QR3602 UN5213-TW
R3607 4700/J3
TP3600 EYF6CU
R3600 68/J3
C3602 50V1/EVN
IC3603 MN12821-RTX
VSS VDD OUT
D3600 MA141K-TW
D3601 MA141K-TW
16
IC3601 HY256ALJ10E2
A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
A13
A14
D0
D1
D2
D3
D4
D5
D6
D7
CS_N
OE_N
WE_N
81
80
79
78
77
76
75
74
84
17
18
(12) U_BUS(1:84)
41
37
59
(3) DFCT
(3) BAR_H
(10) CAM_RQ
R3618 4700/J3
QR3606 UN5213-TW
55
R3617 1000/J3
QR3605 UN5213-TW
58
IC3707 MC74HC04AF-R
38
(10) AT-MA_L
(10) AT-RE_L
(3,5,6,10) LL_MODE
(10) CAM_SCK
(10) CAM_DATA1
(10) CAM_SO
(2) +B
IC3615 MC74HC08AF-R
C3631 0.1/UFV
(10) PG_ENB_I
(10) PG_CLK_I
(10) PG_DI_I
(7) DA_ENB
(7) PG_DI
(7) PG_CLK

*=REFER TO THE COMPARISON CHART
Ref No.3000 Series.

PROCESS SCHEMATIC DIAGRAM 12／12（E15:Page CBA-10）


UCOM+5V (7)
UCOM+3R5V (7)
U_BUS(1:84) (11)
COM_BUS(0:25) (8)
X3601
EF0V8004E0A
R3640
47K/J3
R3639
*PAT/J3
IC3600
MN18P83210FB
C3606
0.1/UFV
C3607
0.1/UFV
R3648
1000/J3
QR3607
*PAT
QR3608
*PAT
QR3609
UN5213-TW
SIO CNT
ABB FLT_L
P ENB
ALC_MODE
CLKO
DO IN
DO OUT
CLKI
DI IN
DI OUT
AT_L/MA
EE CSI
LDI
RE_L/AT
CAM_RQ_L
AVSS
S/H
VREF-
EE CS2
DFCTO
PAL/NTSC
FLD
LL_MODE_L
BAR_H
SIO_IO
XI
VSS
OSCI
OSC2
TEST
EE R/B
HD
VD_L
IRQ
VD
R/W
WE_L
RE_L
RESET_L
EXI
ADR0
ADR1
ADR2
ADR3
ADR4
ADR5
ADR6
ADR7
ADR8
ADR9
ADR10
ADR11
ADR12
ADR13
IP/B
VREF+
AVDD
VDD
WD7
WD6
WD5
WD4
WD3
WD2
WD1
WD0
VSS
ADR15
ADR14
IVSI1506C = MN18P83210FB
C3623
0.1/UFV
C3622
0.1/UFV
C3625
0.1/UFV
C3624
0.1/UFV
C3626
0.1/UFV
IC3613
MC74HC08AF-R
IC3611
HD151015SS
IC3612
HD151015SS
VCCB
VCCA
G_L
DIR
B0 B1 B2 B3 B4 B5 B6 B7 B8
A0 A1 A2 A3 A4 A5 A6 A7 A8
GND
R3643
1000/J3
R3642
1000/J3
(9) R_WD
(7) ALC_MODE
(8) ABB_TRB
(8) ABB_TRG
(8) ABB_TRR
L3607
1R5U/LA
C3637
390P/UV
C3634
470P/UV
R3644
4700/J3
C3640
0.1/UFV
Q3600
2SC3930-BCTW
L3608
1R5U/LA
C3638
390P/UV
C3635
470P/UV
R3645
4700/J3
C3641
0.1/UFV
Q3601
2SC3930-BCTW
L3609
1R5U/LA
C3639
390P/UV
C3636
470P/UV
R3646
4700/J3
C3642
0.1/UFV
Q3602
2SC3930-BCTW
1 2 3 4 5 6 7 8 9 10 11
A B C D E F G H

*=REFER TO THE COMPARISON CHART

Ref No.3600 Series.

PROCESS COMPARISON CHART

REF	NTSC	PAL
C3021	15P/UV	*PAT/UV
C3022	15P/UV	*PAT/UV
C3037	*PAT/UV	*PAT/UV
C3064	39P/UV	15P/UV
C3065	39P/UV	15P/UV
C3069	*PAT/UV	*PAT/UV
C3081	*PAT/UV	*PAT/UV
C3082	*PAT/UV	*PAT/UV
C3092	*PAT/UV	*PAT/UV
C3094	*PAT/UV	*PAT/UV
C3103	*PAT/UFV	0.1/UFV
C3104	*PAT/UFV	0.1/UFV
C3105	*PAT/UFV	0.1/UFV
C3115	*PAT/UFV	*PAT/UFV
C3118	*PAT/UFV	0.1/UFV
C3119	*PAT/EVV	6V33/EVV
C3120	*PAT/UFV	0.1/UFV
C3121	*PAT/UFV	*PAT/UFV
C3204	*PAT/UV	*PAT/UV
C3206	*PAT/UV	*PAT/UV
C3208	*PAT/UV	*PAT/UV
C3234	33P/UV	27P/UV
C3236	27P/UV	18P/UV
C3237	7P/UV	*PAT/UV
C3238	27P/UV	18P/UV
C3239	*PAT/UV	*PAT/UV
C3240	*PAT/UV	*PAT/UV
C3241	82P/UV	56P/UV
C3242	33P/UV	27P/UV
C3243	12P/UV	10P/UV
C3244	33P/UV	27P/UV
C3248	*PAT/UV	*PAT/UV
C3249	*PAT/UV	*PAT/UV
C3250	*PAT/UV	*PAT/UV
C3251	*PAT/UV	*PAT/UV
C3252	*PAT/UV	*PAT/UV
C3253	*PAT/UV	*PAT/UV
C3254	*PAT/UV	*PAT/UV
C3255	*PAT/UV	*PAT/UV
C3256	*PAT/UV	*PAT/UV
C3257	*PAT/UV	*PAT/UV
C3258	*PAT/UV	*PAT/UV
C3493	*PAT/UV	*PAT/UV
C3498	*PAT/UV	*PAT/UV
C3503	*PAT/UV	*PAT/UV
C3551	*PAT/ST	*PAT/ST

REF	NTSC	PAL
C3552	*PAT/UV	*PAT/UV
C3553	*PAT/UFV	*PAT/UFV
C3554	*PAT/UV	*PAT/UV
C3555	*PAT/UFV	*PAT/UFV
C3556	*PAT/UV	*PAT/UV
C3557	*PAT/UFV	*PAT/UFV
C3558	*PAT/ST	*PAT/ST
C3559	*PAT/EVV	*PAT/EVV
C3560	*PAT/EVV	*PAT/EVV
C3561	*PAT/EVV	*PAT/EVV
C3562	*PAT/UFV	*PAT/UFV
C3563	*PAT/UFV	*PAT/UFV
C3564	*PAT/UFV	*PAT/UFV
C3565	*PAT/UV	*PAT/UV
C3566	*PAT/UV	*PAT/UV
C3567	*PAT/UV	*PAT/UV
C3568	*PAT/UV	*PAT/UV
C3569	*PAT/UV	*PAT/UV
C3570	*PAT/UV	*PAT/UV
C3571	*PAT/UV	*PAT/UV
C3745	*PAT/UV	*PAT/UV
C3746	*PAT/UV	*PAT/UV
C3747	*PAT/UV	*PAT/UV
C3748	220P/UV	*PAT/UV
C3749	*PAT/UV	*PAT/UV
C3752	*PAT/UV	*PAT/UV
C3768	18P/UV	33P/UV
C3769	120P/UV	270P/UV
C3784	12P/UV	*PAT/UV
C3788	*PAT/UV	*PAT/UV
C3811	*PAT/UFV	*PAT/UFV
C3812	*PAT/UV	*PAT/UV
C3903	*PAT/ST	*PAT/ST
D3006	*PAT	*PAT
IC3026	*PAT	MC74HC74AF-R
IC3027	*PAT	MC74HC00AF-R
IC3718	*PAT	*PAT
L3003	68U/LA	39U/LA
L3100	*PAT/LC	100U/LC
L3101	*PAT/LC	100U/LC
L3206	15U/LA	12U/LA
L3207	*PAT/LA	*PAT/LA
L3208	*PAT/LA	*PAT/LA
L3209	*PAT/LA	*PAT/LA
L3210	*PAT/LA	*PAT/LA
L3423	*PAT/LA	*PAT/LA

REF	NTSC	PAL
L3424	*PAT/LA	*PAT/LA
L3425	*PAT/LA	*PAT/LA
L3705	47U/LA	100U/LA
Q3101	*PAT	2SB1218A-TW
Q3102	*PAT	2SD1819A-TW
Q3434	*PAT	*PAT
Q3435	*PAT	*PAT
Q3436	*PAT	*PAT
Q3437	*PAT	*PAT
Q3438	*PAT	*PAT
Q3439	*PAT	*PAT
QR3607	*PAT	*PAT
QR3608	*PAT	*PAT
R3026	*PAT/J3	*PAT/J3
R3027	*PAT/J3	*PAT/J3
R3036	15K/J3	12K/J3
R3050	*PAT/J3	*PAT/J3
R3063	3300/J3	1800/J3
R3066	*PAT/J3	*PAT/J3
R3067	*PAT/J3	*PAT/J3
R3073	*PAT/J3	*PAT/J3
R3075	*PAT/J3	0/J3
R3076	0/J3	*PAT/J3
R3077	*PAT/J3	0/J3
R3078	*PAT/J3	0/J3
R3079	*PAT/J3	*PAT/J3
R3081	0/J3	*PAT/J3
R3082	*PAT/J3	0/J3
R3084	*PAT/J3	*PAT/J3
R3090	*PAT/J3	*PAT/J3
R3091	*PAT/J3	*PAT/J3
R3105	*PAT/J3	*PAT/J3
R3106	0/J3	*PAT/J3
R3107	*PAT/J3	*PAT/J3
R3108	*PAT/J3	*PAT/J3
R3114	47K/RE	82K/RE
R3116	*PAT/J3	*PAT/J3
R3118	270/J3	390/J3
R3119	*PAT/J3	*PAT/J3
R3120	*PAT/J3	*PAT/J3
R3121	*PAT/J3	*PAT/J3
R3123	0/J3	*PAT/J3
R3124	0/J3	*PAT/J3
R3129	*PAT/RE	1000/RE
R3130	*PAT/RE	68/RE
R3131	*PAT/RE	3R9/J6

REF	NTSC	PAL
R3132	*PAT/J3	3300/J3
R3133	*PAT/J3	3300/J3
R3137	*PAT/J3	*PAT/J3
R3138	*PAT/J3	*PAT/J3
R3139	*PAT/J3	0/J3
R3140	0/J3	*PAT/J3
R3141	*PAT/J3	0/J3
R3142	0/J3	*PAT/J3
R3143	0/J3	*PAT/J3
R3144	*PAT/J3	*PAT/J3
R3146	*PAT/J3	*PAT/J3
R3148	*PAT/J3	*PAT/J3
R3151	*PAT/J3	*PAT/J3
R3152	*PAT/J3	*PAT/J3
R3213	*PAT/J3	*PAT/J3
R3221	*PAT/J3	*PAT/J3
R3222	*PAT/J3	0/J3
R3223	0/J3	*PAT/J3
R3240	*PAT/J3	*PAT/J3
R3241	*PAT/J3	*PAT/J3
R3242	*PAT/J3	*PAT/J3
R3257	*PAT/J3	*PAT/J3
R3517	*PAT/J3	*PAT/J3
R3538	*PAT/J3	*PAT/J3
R3559	*PAT/J3	*PAT/J3
R3582	*PAT/J3	*PAT/J3
R3584	*PAT/J3	*PAT/J3
R3585	*PAT/J3	*PAT/J3
R3586	*PAT/J3	*PAT/J3
R3591	*PAT/J3	*PAT/J3
R3592	*PAT/J3	*PAT/J3
R3593	*PAT/J3	*PAT/J3
R3594	*PAT/J3	*PAT/J3
R3595	*PAT/J3	*PAT/J3
R3596	*PAT/J3	*PAT/J3
R3639	*PAT/J3	5600/J3
R3649	*PAT/J3	*PAT/J3
R3650	*PAT/J3	*PAT/J3
R3760	180/J3	0/J3
R3802	*PAT/J3	*PAT/J3
R3812	0/J3	*PAT/J3
R3816	*PAT/J6	*PAT/J6
R3817	*PAT/J6	*PAT/J6
R3823	8200/RE	6800/RE
R3824	3300/RE	2200/RE
R3825	100/RE	560/RE
R3831	*PAT/J3	*PAT/J3
R3904	*PAT/J3	*PAT/J3
VC3001	VCV0047-T	VCV0050-T
VR3003	*PAT/VR5	*PAT/VR5
VR3006	*PAT/VR5	*PAT/VR5
VR3007	*PAT/VR5	*PAT/VR5
VR3202	*PAT/VR5	5K/VR5
VR3411	*PAT/VR5	*PAT/VR5
VR3412	*PAT/VR5	*PAT/VR5
VR3413	*PAT/VR5	*PAT/VR5
X3002	VSX0338	VSX0270
X3003	VSX0081	VSX0114-B

PAL
3300/J3
3300/J3
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6800/RE
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560/RE
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*PAT/J3
CV0050-T
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5K/VR5
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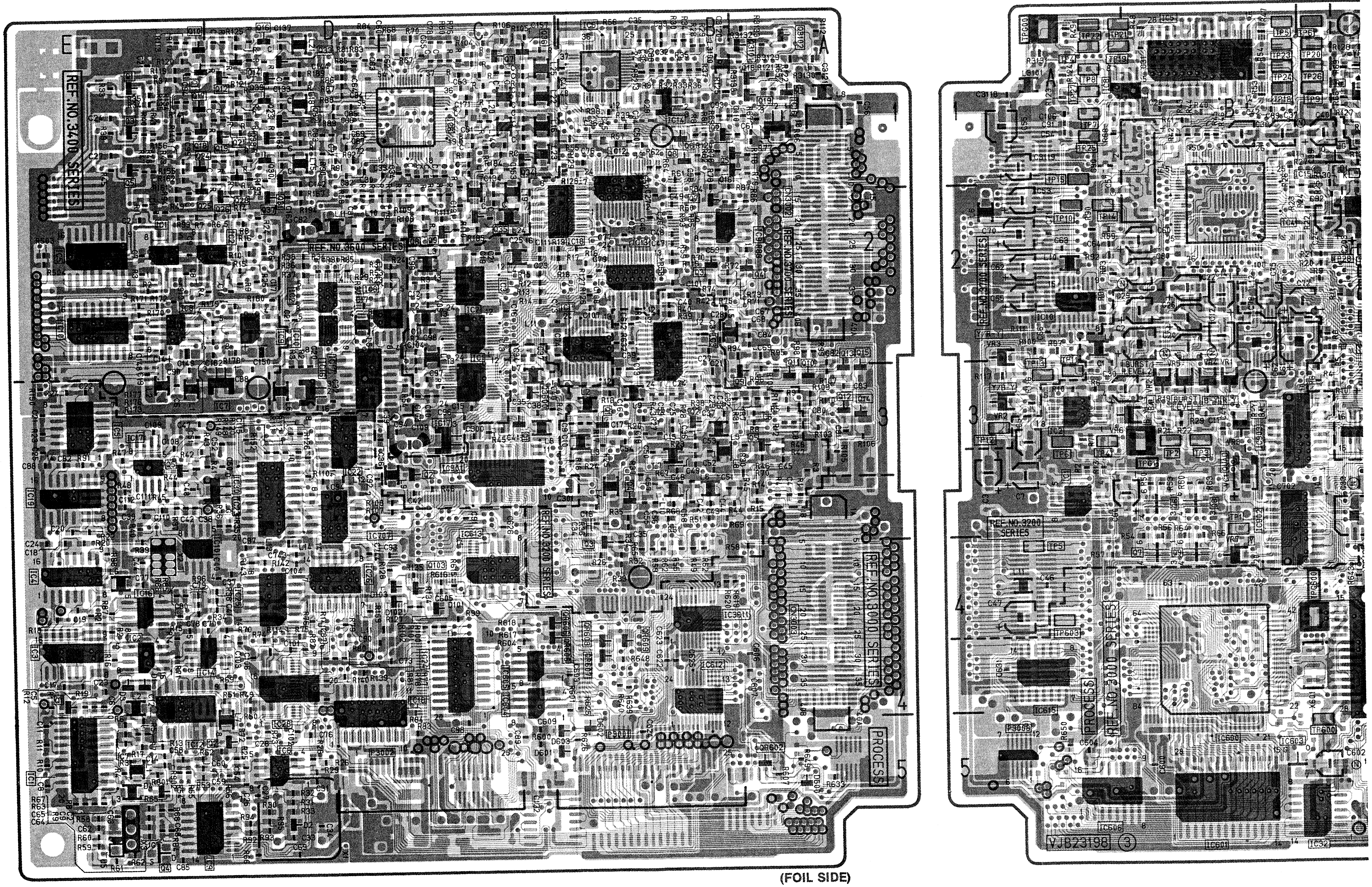
*PAT/VR5
*PAT/VR5
VSX0270
SX0114-B

PROCESS C.B.A.(E15)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REF.NO.3000 SERIES
PROCESS
VJB23198 ③
A
B
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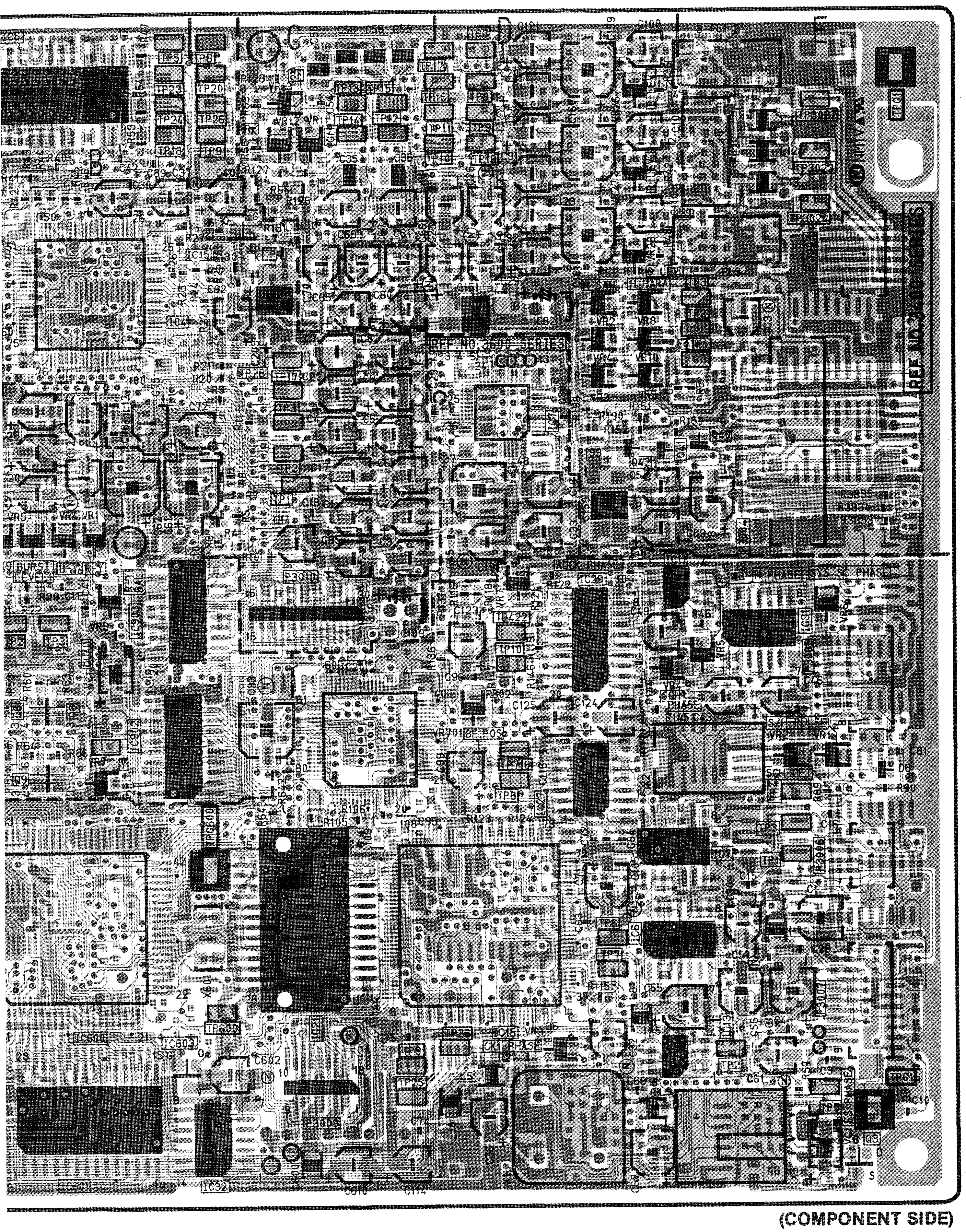
5

(FOIL SIDE)



(COMPONENT SIDE)

PROCESS C.B.A.

Transistor		
Q3001	E-4	Ⓕ
Q3002	E-5	Ⓕ
Q3003	E-5	©
Q3004	E-5	Ⓕ
Q3005	E-3	Ⓕ
Q3101	A-1	Ⓕ
Q3102	A-1	Ⓕ
Q3103	C-4	Ⓕ
Q3201	B-3	Ⓕ
Q3202	B-3	Ⓕ
Q3203	B-4	Ⓕ
Q3204	B-3	Ⓕ
Q3205	A-3	Ⓕ
Q3206	B-3	©
Q3207	B-4	©
Q3208	B-3	©
Q3209	B-4	©
Q3401	E-1	Ⓕ
Q3403	E-1	Ⓕ
Q3405	E-1	Ⓕ
Q3407	C-1	Ⓕ
Q3408	C-2	Ⓕ
Q3409	C-2	Ⓕ
Q3410	E-1	Ⓕ
Q3411	E-1	Ⓕ
Q3412	D-1	Ⓕ
Q3414	D-1	Ⓕ
Q3416	D-1	Ⓕ
Q3417	E-1	Ⓕ
Q3418	E-1	Ⓕ
Q3419	D-1	Ⓕ
Q3421	D-1	Ⓕ
Q3423	D-1	Ⓕ
Q3424	E-1	Ⓕ
Q3425	E-2	Ⓕ
Q3426	D-2	Ⓕ
Q3428	D-2	Ⓕ
Q3430	D-1	Ⓕ
Q3431	D-2	©
Q3432	D-1	©
Q3433	D-1	©
Q3440	E-2	©
Q3441	E-2	©
Q3442	D-2	©
Q3600	C-3	Ⓕ
Q3601	C-3	Ⓕ
Q3602	C-3	Ⓕ
Q3701	A-1	Ⓕ
Q3702	B-1	Ⓕ
Q3703	B-2	Ⓕ
Q3704	A-2	Ⓕ
Q3705	B-1	Ⓕ
Q3706	B-1	Ⓕ
Q3707	B-2	Ⓕ
Q3708	B-1	Ⓕ
Q3709	A-3	Ⓕ
Q3710	A-3	Ⓕ
Q3711	A-3	Ⓕ
Q3712	A-3	Ⓕ
Q3713	A-2	Ⓕ
Q3714	A-3	Ⓕ
Q3715	A-2	Ⓕ
Q3716	B-1	Ⓕ
Q3718	A-1	Ⓕ
Q3719	A-1	Ⓕ

Transistor & Resistor		
QR3602	A-5	Ⓕ
QR3605	B-4	Ⓕ
QR3606	B-4	Ⓕ
QR3609	B-4	Ⓕ

Integrated Circuit		
IC3001	E-5	Ⓕ
IC3002	E-4	Ⓕ
IC3003	E-4	Ⓕ
IC3004	E-4	Ⓕ
IC3005	E-3	Ⓕ
IC3006	D-4	©
IC3007	E-4	©
IC3008	D-5	Ⓕ
IC3009	E-5	Ⓕ
IC3010	D-4	Ⓕ
IC3011	D-3	©
IC3012	E-5	Ⓕ
IC3013	E-5	©
IC3014	E-4	Ⓕ
IC3015	D-5	©
IC3016	E-4	Ⓕ
IC3017	E-3	Ⓕ
IC3018	C-4	Ⓕ
IC3019	E-3	Ⓕ
IC3020	C-3	©
IC3022	D-3	Ⓕ
IC3023	D-3	Ⓕ
IC3024	C-4	Ⓕ
IC3025	D-4	Ⓕ
IC3026	D-4	Ⓕ
IC3027	D-4	©
IC3028	D-5	Ⓕ
IC3029	D-3	©
IC3030	D-3	Ⓕ
IC3031	E-3	©
IC3032	C-5	©
IC3201	A-3	©
IC3202	A-3	©
IC3203	B-2	Ⓕ
IC3401	E-2	Ⓕ
IC3402	D-2	Ⓕ
IC3405	E-2	Ⓕ
IC3406	C-1	Ⓕ
IC3407	D-3	Ⓕ
IC3408	E-2	Ⓕ
IC3409	D-2	Ⓕ
IC3410	E-2	Ⓕ
IC3600	B-5	©
IC3601	B-5	©
IC3602	D-2	Ⓕ
IC3603	B-5	©
IC3604	C-4	Ⓕ
IC3605	C-4	Ⓕ
IC3606	A-5	©
IC3607	D-2	©
IC3608	D-2	Ⓕ
IC3610	D-2	Ⓕ
IC3611	A-4	Ⓕ
IC3612	B-4	Ⓕ
IC3613	C-3	©
IC3615	A-4	©
IC3616	D-2	Ⓕ
IC3617	D-2	Ⓕ
IC3701	C-2	Ⓕ
IC3702	C-2	Ⓕ
IC3703	C-2	Ⓕ
IC3704	B-2	©
IC3705	B-1	©
IC3706	B-1	Ⓕ
IC3707	D-3	Ⓕ
IC3708	A-1	©
IC3709	A-2	Ⓕ
IC3710	A-2	©
IC3711	B-2	Ⓕ
IC3712	B-1	Ⓕ
IC3713	B-2	Ⓕ
IC3714	B-1	Ⓕ
IC3715	C-1	©
IC3716	A-1	Ⓕ
IC3717	C-3	Ⓕ
IC3901	C-3	Ⓕ
IC3902	B-3	©
IC3903	B-3	©

Test Point		
TP3001	E-4	©
TP3002	E-5	©
TP3003	E-4	©
TP3004	E-4	©
TP3005	E-5	©
TP3006	D-4	©
TP3007	D-4	©
TP3008	D-4	©
TP3009	C-5	©
TP3010	D-3	©
TP3022	E-1	©
TP3023	E-1	©
TP3024	E-1	©
TP3025	C-5	©
TP3026	D-5	©
TP3201	B-3	©
TP3202	B-3	©
TP3203	B-3	©
TP3204	A-3	©
TP3205	A-4	©
TP3206	A-3	©
TP3401	E-2	©
TP3402	E-2	©
TP3403	E-2	©
TP3407	D-1	©
TP3408	D-1	©
TP3409	D-1	©
TP3410	C-1	©
TP3411	C-1	©
TP3412	C-1	©
TP3413	C-1	©
TP3414	C-1	©
TP3415	C-1	©
TP3416	C-1	©
TP3417	C-1	©
TP3418	D-1	©
TP3422	D-3	©
TP3600	C-5	©
TP3603	A-4	©
TP3701	C-2	©
TP3702	C-2	©
TP3703	C-2	©
TP3704	A-1	©
TP3705	B-1	©
TP3706	C-1	©
TP3707	A-1	©
TP3708	A-1	©
TP3709	C-1	©
TP3710	A-2	©
TP3711	A-3	©
TP3712	A-3	©
TP3713	A-3	©
TP3714	A-2	©
TP3715	A-1	©
TP3716	D-4	©
TP3717	C-2	©
TP3718	B-1	©
TP3719	A-1	©
TP3720	C-1	©
TP3721	A-1	©
TP3722	A-1	©
TP3723	B-1	©
TP3724	B-1	©
TP3725	A-1	©
TP3726	C-1	©
TP3727	A-1	©
TP3728	C-2	©
TPG3001	E-5	©
TPG3201	B-3	©
TPG3401	E-1	©
TPG3600	C-4	©
TPG3700	A-1	©

Adjustment		
VC3001	E-5	©
VC3201	B-3	©
VR3001	E-3	©
VR3002	E-3	©
VR3004	D-3	©
VR3005	E-3	©
VR3201	B-3	©
VR3202	B-3	©
VR3203	B-3	©
VR3204	B-3	©
VR3205	B-3	©
VR3206	A-3	©
VR3207	B-4	©
VR3402	D-2	©
VR3403	D-2	©
VR3404	D-2	©
VR3408	D-2	©
VR3409	D-2	©
VR3410	D-2	©
VR3426	D-1	©
VR3427	D-1	©
VR3428	D-1	©
VR3701	D-3	©
VR3702	A-3	©
VR3703	A-2	©

Connector		
CN3002	A-2	Ⓕ
CN3003	A-4	Ⓕ
P3001	B-5	Ⓕ
P3002	D-5	Ⓕ
P3003	E-1	©
P3004	E-3	©
P3005	E-3	©
P3006	E-4	©
P3007	E-4	©
P3008	A-5	©
P3009	C-5	©
P3010	C-3	©

ADDRESS INFORMATION
Ⓕ...FOIL SIDE
©...COMPONENT SIDE

ELECTRICAL PARTS LIST

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VEP23198C	P.C.BOARD W/COMPONENT		
			PROCESS		
			CAPACITORS		
C3001		ECEV1CV220Q	E.CAPACITOR 16V 22U	1	
C3002		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3003		ECUX1H180JCV	C.CAPACITOR CH 50V 18P	1	
C3004		ECUX1H680JCV	C.CAPACITOR CH 50V 68P	1	
C3005-07		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	3	
C3008,09		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C3010		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C3011		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C3012		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3013		ECEV1CV220Q	E.CAPACITOR 16V 22U	1	
C3014		ECUX1H330JCV	C.CAPACITOR CH 50V 33P	1	
C3015		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3016		ECUX1H180JCV	C.CAPACITOR CH 50V 18P	1	
C3017		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C3018,19		ECUX1H101JCV	C.CAPACITOR CH 50V 100P	2	
C3020		ECUX1H330JCV	C.CAPACITOR CH 50V 33P	1	
C3021,22		ECUX1H150JCV	C.CAPACITOR CH 50V 15P	2	
C3023-25		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	3	
C3026		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C3027-29		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	3	
C3030		ECEX0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3031		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3032		ECEV1HNR47Q	E.CAPACITOR 50V 0.47U	1	
C3033		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C3034		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3036		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3038-40		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	3	
C3041		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C3042		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3043		ECEV1HN010Q	E.CAPACITOR 50V 1U	1	
C3044		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3046		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3047,48		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	2	
C3049		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3050-52		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	3	
C3054		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	1	
C3055		ECEV1CV220Q	E.CAPACITOR 16V 22U	1	
C3056		ECEV1CN100Q	E.CAPACITOR 16V 10U	1	
C3057		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3058		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C3059,60		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	2	
C3061		ECEV1EN3R3Q	E.CAPACITOR 25V 3.3U	1	
C3062		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3063		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C3064,65		ECUX1H390JCV	C.CAPACITOR CH 50V 39P	2	
C3066		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3067		ECEV1CV220Q	E.CAPACITOR 16V 22U	1	
C3068		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C3070		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3071		ECEV1CN100Q	E.CAPACITOR 16V 10U	1	
C3072-77		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	6	
C3078		ECUX1H330JCV	C.CAPACITOR CH 50V 33P	1	
C3079,80		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	2	
C3083-85		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	3	
C3087-91		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	5	
C3093		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3095-98		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	4	
C3099		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3101,02		VCC0037F047	C.CAPACITOR CH 50V 47P	2	
C3106		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3108		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3109		ECUX1H561JCV	C.CAPACITOR CH 50V 560P	1	
C3110,11		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	2	
C3112		ECUX1H150JCV	C.CAPACITOR CH 50V 15P	1	
C3113		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3114		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3116		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3122		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3123-25		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	3	
C3201		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3202		ECEV1CV220Q	E.CAPACITOR 16V 22U	1	
C3203		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3205		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3207		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3209,10		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	2	
C3211		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	1	
C3212		ECEV1HN010Q	E.CAPACITOR 50V 1U	1	
C3213		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C3214		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3215		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C3216		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3217		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C3218		ECUX1H220JCV	C.CAPACITOR CH 50V 22P	1	
C3219		ECUX1H100DCV	C.CAPACITOR CH 50V 10P	1	
C3220		ECEV1HN010Q	E.CAPACITOR 50V 1U	1	
C3221		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C3222		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3223		ECUX1H470JCV	C.CAPACITOR CH 50V 47P	1	
C3224		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3225		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C3226		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3227,28		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	2	
C3229,30		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	2	
C3231		ECUM1E473KBN	C.CAPACITOR CH 25V 0.047U	1	
C3232		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3233		ECEV0JN470Q	E.CAPACITOR 6.3V 47U	1	
C3234		ECUX1H330JCV	C.CAPACITOR CH 50V 33P	1	
C3235		ECUX1H150JCV	C.CAPACITOR CH 50V 15P	1	
C3236		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	1	
C3237		ECUX1H070DCV	C.CAPACITOR CH 50V 7P	1	
C3238		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	1	
C3241		ECUX1H820JCV	C.CAPACITOR CH 50V 82P	1	
C3242		ECUX1H330JCV	C.CAPACITOR CH 50V 33P	1	
C3243		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	1	
C3244		ECUX1H330JCV	C.CAPACITOR CH 50V 33P	1	
C3245,46		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	2	
C3247		ECEV1CV220Q	E.CAPACITOR 16V 22U	1	
C3259		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3260		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3261,62		ECEV0JV101Q	E.CAPACITOR 6.3V 100U	2	
C3401		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3402		ECUX1H102JV	C.CAPACITOR CH 50V 1000P	1	
C3403		ECEV1HN010Q	E.CAPACITOR 50V 1U	1	
C3404		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C3405		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3406-10		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	5	
C3414-17		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	4	
C3418		ECEV1CV220Q	E.CAPACITOR 16V 22U	1	
C3419		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3420		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3421		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3423		ECEV1HNR22Q	E.CAPACITOR 50V 0.22U	1	
C3424		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3426		ECEV1HNR22Q	E.CAPACITOR 50V 0.22U	1	
C3427		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3429		ECEV1HNR22Q	E.CAPACITOR 50V 0.22U	1	
C3430		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3431		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3432		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3433,34		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	2	
C3435,36		ECHU1C104J	P.CAPACITOR 16V 0.1U	2	
C3437		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C3438		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3439		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C3440		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3447-55		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	9	
C3456-59		ECHU1C104J	P.CAPACITOR 16V 0.1U	4	
C3460		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C3461		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C3462,63		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	2	
C3464		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C3465-68		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	4	
C3469		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3470		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3471		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3475-78		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	4	
C3479		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3480		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3481		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3482		VCEA0JAP470	CAPACITOR	1	
C3483		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C3484-88		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	5	
C3489		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3490		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3491,92		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	2	
C3494		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	1	
C3499		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	1	
C3504		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	1	
C3508-10		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	3	
C3521-23		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	3	
C3527,28		ECUX1H150JCV	C.CAPACITOR CH 50V 15P	2	
C3529		ECUX1H391JCV	C.CAPACITOR CH 50V 390P	1	
C3530		ECUX1H100DCV	C.CAPACITOR CH 50V 10P	1	
C3531,32		ECUX1H150JCV	C.CAPACITOR CH 50V 15P	2	
C3533		ECUX1H391JCV	C.CAPACITOR CH 50V 390P	1	
C3534		ECUX1H100DCV	C.CAPACITOR CH 50V 10P	1	
C3535,36		ECUX1H150JCV	C.CAPACITOR CH 50V 15P	2	
C3537		ECUX1H391JCV	C.CAPACITOR CH 50V 390P	1	
C3538		ECUX1H100DCV	C.CAPACITOR CH 50V 10P	1	
C3542-44		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	3	
C3548-50		ECST1VY224Z	E.CAPACITOR 25V 22M	3	
C3600		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3602		ECEV1HN010Q	E.CAPACITOR 50V 1U	1	
C3603-07		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	5	
C3609		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3610		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3617		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3618		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3619		ECEV1EN3R3Q	E.CAPACITOR 25V 3.3U	1	
C3620-26		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	7	
C3629-32		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	4	
C3633		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3634-36		ECUX1H471JCV	C.CAPACITOR CH 50V 470P	3	
C3637-39		ECUX1H391JCV	C.CAPACITOR CH 50V 390P	3	
C3640-42		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	3	
C3644		ECEV0JV101Q	E.CAPACITOR 6.3V 100U	1	
C3645		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3701-09		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	9	
C3710-12		ECUX1H100DCV	C.CAPACITOR CH 50V 10P	3	
C3713		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3714		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3715,16		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	2	
C3717		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3718,19		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	2	
C3720		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3721-23		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	3	
C3724		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3725-29		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	5	
C3730		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3731-36		ECUV1E104ZFV	C.CAPACITOR CH 25V 0.1U	6	
C3737		ECEV1HN010Q	E.CAPACITOR 50V 1U	1	
C3738		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C3739		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3740		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3741-43		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	3	
C3744		ECUX1H331JCV	C.CAPACITOR CH 50V 330P	1	
C3749		ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	
C3753		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3754		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3755		ECEV1CV220Q	E.CAPACITOR 16V 22U	1	
C3756-58		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	3	
C3759		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	1	
C3760		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3761		ECUX1H103KBV	C.CAPACITOR CH 50V 0.01U	1	
C3762		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3763,64		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	2	
C3765		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3766,67		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	2	
C3768		ECUX1H180JCV	C.CAPACITOR CH 50V 18P	1	
C3769		ECUX1H121JCV	C.CAPACITOR CH 50V 120P	1	
C3770		ECEV1CV220Q	E.CAPACITOR 16V 22U	1	
C3771		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	1	
C3772		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3773,74		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	2	
C3775		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3776-79		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	4	
C3780		ECUX1H100DCV	C.CAPACITOR CH 50V 10P	1	
C3781		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	1	
C3782		ECUX1H100DCV	C.CAPACITOR CH 50V 10P	1	
C3783		ECUX1H270JCV	C.CAPACITOR CH 50V 27P	1	
C3784		ECUX1H120JCV	C.CAPACITOR CH 50V 12P	1	
C3787		ECEV1HN010Q	E.CAPACITOR 50V 1U	1	
C3790-94		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	5	
C3795		ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C3796-99		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	4	
C3801		ECUX1H331JCV	C.CAPACITOR CH 50V 330P	1	
C3803-06		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	4	
C3807,08		ECUX1H151JCV	C.CAPACITOR CH 50V 150P	2	
C3809		VCEA0JAP470	CAPACITOR 6.3V 47U	1	
C3810		ECUX1H680JCV	C.CAPACITOR CH 50V 68P	1	
C3900-02		ECUX1E104ZFV	C.CAPACITOR CH 25V 0.1U	3	
CN3002,03		VJS3505A080	CONNECTOR (FEMALE)	2	
D3001-04		MA141K	DIODE	4	<R>
D3005		MA335-R	DIODE	1	<R>
D3101-03		MA141K	DIODE	3	<R>
D3600-03		MA141K	DIODE	4	<R>
D3701		MA8043	DIODE	1	<R>
FL3401-03		ELB4C556	FILTER	3	
FL3701		ELB4D551	FILTER	1	
IC3001		AN91A12S	IC	1	<R>
IC3002		AD790JR	IC	1	<R>
IC3003,04		MN74HC221S	IC	2	<R>
IC3005		MC74HC04AF	IC	1	<R>
IC3006		MC74HC00AF	IC	1	<R>
IC3007		MC74HC125AF	IC	1	<R>
IC3008		NJM062M	IC	1	<R>
IC3009		MC74HC04AF	IC	1	<R>
IC3010,11		NJM062M	IC	2	<R>
IC3012		MC14053BF	IC	1	<R>
IC3013		NJM062M	IC	1	<R>
IC3014		AD790JR	IC	1	<R>
IC3015		UPD65650J203	IC	1	<R>
IC3016,17		AD790JR	IC	2	<R>
IC3018		MC74HC244AF	IC	1	<R>
IC3019		MN74HC221S	IC	1	<R>
IC3020		CG24692-4188	IC	1	<R>
IC3022		MC74HC04AF	IC	1	<R>
IC3023,24		MC74HC244AF	IC	2	<R>
IC3025		MC74HC74AF	IC	1	<R>
IC3028		SN74LS221NS	IC	1	<R>
IC3029		MC74HC244AF	IC	1	<R>
IC3030		XC62AP5002P	IC	1	<R>
IC3031,32		MC74HC00AF	IC	2	<R>
IC3201,02		MC14577CF	IC	2	<R>
IC3203		M51272FP	IC	1	<R>
IC3401,02		NJM062M	IC	2	<R>
IC3405		MC14053BF	IC	1	<R>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
IC3406		UPC2391GB	IC	1	<R>
IC3407		XC62AP5002P	IC	1	<R>
IC3408,09		NJM062M	IC	2	<R>
IC3410		MC14053BF	IC	1	<R>
IC3600		VSI1506C	IC	1	<R>
IC3601		HY256ALJ10E2	IC	1	<R>
IC3602		NJM2904M	IC	1	<R>
IC3603		MN12821R	IC	1	<R>
IC3604,05		AK6440F	IC	2	<R>
IC3606		MC14053BF	IC	1	<R>
IC3607		MB88344PFV	IC	1	<R>
IC3608		NJM2904M	IC	1	<R>
IC3610		NJM2904M	IC	1	<R>
IC3611,12		HD151015SS	IC	2	<R>
IC3613		MC74HC08AF	IC	1	<R>
IC3615		MC74HC08AF	IC	1	<R>
IC3616		XC62AP5002P	IC	1	<R>
IC3617		MC14053BF	IC	1	<R>
IC3701-03		MN655431SHE2	IC	3	<R>
IC3704		MN6734	IC	1	<R>
IC3705		ADV7128KR30	IC	1	<R>
IC3706		MN657011H	IC	1	<R>
IC3707		MC74HC04AF	IC	1	<R>
IC3708		AD589JR	IC	1	<R>
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IC3710		AN2040SB	IC	1	<R>
IC3711-13		HD151015SS	IC	3	<R>
IC3714		XC62AP5002P	IC	1	<R>
IC3715		XC62AP3502ML	IC	1	<R>
IC3716,17		XC62AP5002P	IC	2	<R>
IC3901-03		MC74HC244AF	IC	3	<R>
ICS3021		VJS3427X028	CONNECTOR (FEMALE)	1	<R>
L3001		VLQ0163J221	COIL 220UH	1	
L3002		VLQ0319K101	COIL 100UH	1	
L3003		VLQ0163J680	COIL 68UH	1	
L3004-06		VLQ0319K101	COIL 100UH	3	
L3007		VLQ0163J221	COIL 220UH	1	
L3008-10		VLQ0319K101	COIL 100UH	3	
L3011-14		VLP0147	COIL	4	
L3201,02		VLQ0319K101	COIL 100UH	2	
L3203,04		VLQ0163J470	COIL 47UH	2	
L3205		VLQ0163J8R2	COIL 8.2UH	1	
L3206		VLQ0163J150	COIL 15UH	1	
L3211		VLQ0319K101	COIL 100UH	1	
L3401-03		VLQ0319K101	COIL 100UH	3	
L3410,11		VLQ0319K220	COIL 22UH	2	
L3412,13		VLQ0319K101	COIL 100UH	2	
L3414		VLQ0163J220	COIL 22UH	1	
L3415		VLQ0163J1R5	COIL 1.5UH	1	
L3416		VLQ0163J120	COIL 12UH	1	
L3417		VLQ0163J220	COIL 22UH	1	
L3418		VLQ0163J1R5	COIL 1.5UH	1	
L3419		VLQ0163J120	COIL 12UH	1	
L3420		VLQ0163J220	COIL 22UH	1	
L3421		VLQ0163J1R5	COIL 1.5UH	1	
L3422		VLQ0163J120	COIL 12UH	1	
L3600		VLQ0319K101	COIL 100UH	1	
L3605,06		VLQ0319K101	COIL 100UH	2	
L3607-09		VLQ0163J1R5	COIL 1.5UH	3	
L3701-04		VLQ0319K101	COIL 100UH	4	
L3705		VLQ0163J470	COIL 47UH	1	
L3706		VLQ0319K101	COIL 100UH	1	
L3708		VLQ0319K101	COIL 100UH	1	
L3710		VLQ0319K101	COIL 100UH	1	
L3711,12		VLP0147	COIL	2	
P3001,02		VJS2907D025	CONNECTOR (FEMALE)	2	
P3003		VJP3125B006	CONNECTOR (MALE)	1	
P3004		VJS3406D018	CONNECTOR (FEMALE)	1	
P3005		VJP3125B008	CONNECTOR (MALE)	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
P3006		VJP3125D004	CONNECTOR (MALE)	1	
P3007		VJP3125D009	CONNECTOR (MALE)	1	
P3008		VJP3358A012	CONNECTOR (MALE)	1	
P3009		VJP3358A018	CONNECTOR (MALE)	1	
P3010		VJP3358A030	CONNECTOR (MALE)	1	
Q3001		2SD1819A	TRANSISTOR	1	<R>
Q3002		2SB1218A	TRANSISTOR	1	<R>
Q3003,04		2SK608-QR	TRANSISTOR	2	<R>
Q3005		2SB1218A	TRANSISTOR	1	<R>
Q3101		2SB1218A	TRANSISTOR	1	<R>
Q3102		2SD1819A	TRANSISTOR	1	<R>
Q3103		UN5213	TRANSISTOR	1	<R>
Q3201,02		2SB1218A	TRANSISTOR	2	<R>
Q3203		2SD1819A	TRANSISTOR	1	<R>
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Q3206		XN4401	TRANSISTOR	1	<R>
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Q3405		2SD1819A	TRANSISTOR	1	<R>
Q3407-09		2SD1819A	TRANSISTOR	3	<R>
Q3410		2SC3930-C	TRANSISTOR	1	<R>
Q3411,12		2SA1532-B	TRANSISTOR	2	<R>
Q3414		2SC3930-C	TRANSISTOR	1	<R>
Q3416		2SD1819A	TRANSISTOR	1	<R>
Q3417		2SC3930-C	TRANSISTOR	1	<R>
Q3418,19		2SA1532-B	TRANSISTOR	2	<R>
Q3421		2SC3930-C	TRANSISTOR	1	<R>
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Q3424		2SC3930-C	TRANSISTOR	1	<R>
Q3425,26		2SA1532-B	TRANSISTOR	2	<R>
Q3428		2SC3930-C	TRANSISTOR	1	<R>
Q3430		2SD1819A	TRANSISTOR	1	<R>
Q3431-33		2SC3930-C	TRANSISTOR	3	<R>
Q3440-42		2SA1532-B	TRANSISTOR	3	<R>
Q3600-02		2SC3930-C	TRANSISTOR	3	<R>
Q3701-03		2SD1819A	TRANSISTOR	3	<R>
Q3704,05		2SB1218A	TRANSISTOR	2	<R>
Q3706		2SD1819A	TRANSISTOR	1	<R>
Q3707,08		2SB1218A	TRANSISTOR	2	<R>
Q3709-11		2SD1819A	TRANSISTOR	3	<R>
Q3712,13		2SB1218A	TRANSISTOR	2	<R>
Q3714-16		2SD1819A	TRANSISTOR	3	<R>
Q3718,19		2SB1218A	TRANSISTOR	2	<R>
					<R>
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QR3602		UN5213	TRANSISTOR	1	<R>
QR3605,06		UN5213	TRANSISTOR	2	<R>
QR3609		UN5213	TRANSISTOR	1	<R>
			RESISTORS		
R3001		ERJ3GEYJ105	M.RESISTOR CH1/16W 1M	1	
R3002		ERJ3GEYJ392	M.RESISTOR CH1/16W 3.9K	1	
R3003		ERJ3GEYJ221	M.RESISTOR CH1/16W 220	1	
R3004		ERJ3GEYJ222	M.RESISTOR CH1/16W 2.2K	1	
R3005-07		ERJ3GEYJ223	M.RESISTOR CH1/16W 22K	3	
R3008		ERJ3GEYJ224	M.RESISTOR CH1/16W 220K	1	
R3009		ERJ3GEYJ684	M.RESISTOR CH1/16W 680K	1	
R3010		ERJ3GEYJ123	M.RESISTOR CH1/16W 12K	1	
R3011,12		ERJ3GEYJ822	M.RESISTOR CH1/16W 8.2K	2	
R3013		ERJ3GEYJ222	M.RESISTOR CH1/16W 2.2K	1	
R3014		ERJ3GEYJ224	M.RESISTOR CH1/16W 220K	1	
R3015		ERJ3GEYJ272	M.RESISTOR CH1/16W 2.7K	1	
R3016		ERJ3GEYJ561	M.RESISTOR CH1/16W 560	1	
R3017		ERJ3GEYJ683	M.RESISTOR CH1/16W 68K	1	
R3018		ERJ3GEYJ223	M.RESISTOR CH1/16W 22K	1	

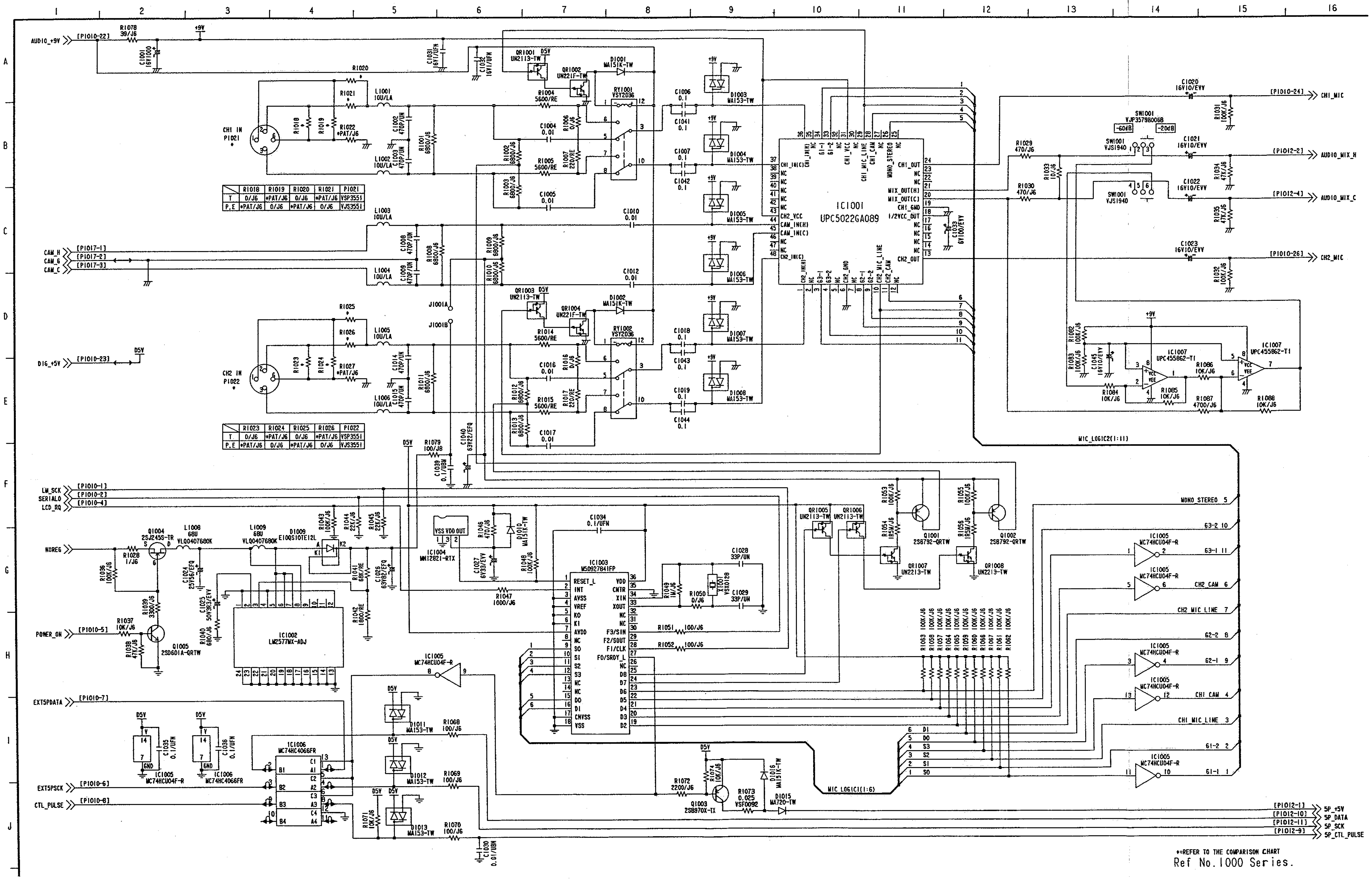
Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R3019,20		ERJ3GEYJ563	M.RESISTOR CH1/16W 56K	2	
R3021		ERJ3GEYJ682	M.RESISTOR CH1/16W 6.8K	1	
R3022		ERJ3GEYJ332	M.RESISTOR CH1/16W 3.3K	1	
R3023,24		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	2	
R3025		ERJ3GEYJ471	M.RESISTOR CH1/16W 470	1	
R3028		ERJ3GEYJ183	M.RESISTOR CH1/16W 18K	1	
R3029		ERJ3GEYJ153	M.RESISTOR CH1/16W 15K	1	
R3030		ERJ3GEYJ333	M.RESISTOR CH1/16W 33K	1	
R3031		ERJ3GEYJ105	M.RESISTOR CH1/16W 1M	1	
R3032		ERJ3GEYJ223	M.RESISTOR CH1/16W 22K	1	
R3033		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	1	
R3034		ERJ3GEYJ122	M.RESISTOR CH1/16W 1.2K	1	
R3035		ERJ3GEYJ123	M.RESISTOR CH1/16W 12K	1	
R3036		ERJ3GEYJ153	M.RESISTOR CH1/16W 15K	1	
R3037		ERJ3GEYJ273	M.RESISTOR CH1/16W 27K	1	
R3038		ERJ3GEYJ473	M.RESISTOR CH1/16W 47K	1	
R3039		ERJ3GEYJ105	M.RESISTOR CH1/16W 1M	1	
R3040		ERJ3GEYJ104	M.RESISTOR CH1/16W 100K	1	
R3041		ERJ3GEYJ222	M.RESISTOR CH1/16W 2.2K	1	
R3042		ERJ3GEYJ223	M.RESISTOR CH1/16W 22K	1	
R3043		VRE0034E122	M.RESISTOR CH 1/10W 1.2K	1	
R3044		ERJ3GEYJ181	M.RESISTOR CH1/16W 180	1	
R3045		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	1	
R3046		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	1	
R3047		ERJ3GEYJ561	M.RESISTOR CH1/16W 560	1	
R3048		ERJ3GEYJ822	M.RESISTOR CH1/16W 8.2K	1	
R3049		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3051		ERJ3GEYJ222	M.RESISTOR CH1/16W 2.2K	1	
R3052		ERJ3GEYJ122	M.RESISTOR CH1/16W 1.2K	1	
R3053		ERJ3GEYJ223	M.RESISTOR CH1/16W 22K	1	
R3054		ERJ3GEYJ153	M.RESISTOR CH1/16W 15K	1	
R3055		ERJ3GEYJ684	M.RESISTOR CH1/16W 680K	1	
R3056		ERJ3GEYJ183	M.RESISTOR CH1/16W 18K	1	
R3057		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	1	
R3058		ERJ3GEYJ473	M.RESISTOR CH1/16W 47K	1	
R3059		ERJ3GEYJ123	M.RESISTOR CH1/16W 12K	1	
R3060		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	1	
R3061,62		ERJ3GEYJ473	M.RESISTOR CH1/16W 47K	2	
R3063,64		ERJ3GEYJ332	M.RESISTOR CH1/16W 3.3K	2	
R3065		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	1	
R3068		ERJ3GEYJ473	M.RESISTOR CH1/16W 47K	1	
R3069		ERJ3GEYJ183	M.RESISTOR CH1/16W 18K	1	
R3070		ERJ3GEYJ123	M.RESISTOR CH1/16W 12K	1	
R3071		ERJ3GEYJ561	M.RESISTOR CH1/16W 560	1	
R3072		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3074		ERJ3GEYJ104	M.RESISTOR CH1/16W 100K	1	
R3076		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3080,81		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	2	
R3083		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3085		ERJ3GEYJ392	M.RESISTOR CH1/16W 3.9K	1	
R3086		ERJ3GEYJ123	M.RESISTOR CH1/16W 12K	1	
R3087		ERJ3GEYJ561	M.RESISTOR CH1/16W 560	1	
R3088		ERJ3GEYJ821	M.RESISTOR CH1/16W 820	1	
R3089		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3092		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	1	
R3093		ERJ3GEYJ221	M.RESISTOR CH1/16W 220	1	
R3094		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	1	
R3095		ERJ3GEYJ221	M.RESISTOR CH1/16W 220	1	
R3096		ERJ3GEYJ392	M.RESISTOR CH1/16W 3.9K	1	
R3099-02		ERJ3GEYJ104	M.RESISTOR CH1/16W 100K	4	
R3106		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3109		ERJ3GEYJ101	M.RESISTOR CH1/16W 100	1	
R3110		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3111		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	1	
R3112		ERJ3GEYJ222	M.RESISTOR CH1/16W 2.2K	1	
R3114		VRE0034E473	M.RESISTOR CH 1/10W 47K	1	
R3115		VRE0034E333	M.RESISTOR CH 1/10W 33K	1	
R3117		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3118		ERJ3GEYJ471	M.RESISTOR CH1/16W 470	1	
R3122-24		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	3	
R3126		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3127		ERJ3GEYJ472	M.RESISTOR CH1/16W 4.7K	1	
R3128		ERJ3GEYJ223	M.RESISTOR CH1/16W 22K	1	
R3132,33		ERJ3GEYJ332	M.RESISTOR CH1/16W 3.3K	2	
R3134,35		ERJ3GEYJ104	M.RESISTOR CH1/16W 100K	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R3136		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3140		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3142,43		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	2	
R3145		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3147		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3149,50		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	2	
R3201		ERJ3GEYJ393	M.RESISTOR CH1/16W 39K	1	
R3202		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	1	
R3203		ERJ3GEYJ561	M.RESISTOR CH1/16W 560	1	
R3204		ERJ3GEYJ821	M.RESISTOR CH1/16W 820	1	
R3205		ERJ3GEYJ273	M.RESISTOR CH1/16W 27K	1	
R3206		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	1	
R3207,08		ERJ3GEYJ561	M.RESISTOR CH1/16W 560	2	
R3209		ERJ3GEYJ273	M.RESISTOR CH1/16W 27K	1	
R3210		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	1	
R3211,12		ERJ3GEYJ561	M.RESISTOR CH1/16W 560	2	
R3214,15		ERJ3GEYJ561	M.RESISTOR CH1/16W 560	2	
R3216		ERJ3GEYJ821	M.RESISTOR CH1/16W 820	1	
R3217		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	1	
R3218		ERJ3GEYJ332	M.RESISTOR CH1/16W 3.3K	1	
R3219		ERJ3GEYJ101	M.RESISTOR CH1/16W 100	1	
R3220		ERJ3GEYJ331	M.RESISTOR CH1/16W 330	1	
R3223		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3224		ERJ3GEYJ183	M.RESISTOR CH1/16W 18K	1	
R3225		ERJ3GEYJ273	M.RESISTOR CH1/16W 27K	1	
R3226		ERJ3GEYJ821	M.RESISTOR CH1/16W 820	1	
R3227		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	1	
R3228		ERJ3GEYJ332	M.RESISTOR CH1/16W 3.3K	1	
R3229		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3230		ERJ3GEYJ183	M.RESISTOR CH1/16W 18K	1	
R3231,32		ERJ3GEYJ273	M.RESISTOR CH1/16W 27K	2	
R3233		ERJ3GEYJ223	M.RESISTOR CH1/16W 22K	1	
R3234,35		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	2	
R3236-38		ERJ3GEYJ471	M.RESISTOR CH1/16W 470	3	
R3239		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3243		ERJ3GEYJ471	M.RESISTOR CH1/16W 470	1	
R3244		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3245		ERJ3GEYJ471	M.RESISTOR CH1/16W 470	1	
R3246		ERJ3GEYJ273	M.RESISTOR CH1/16W 27K	1	
R3247		ERJ3GEYJ183	M.RESISTOR CH1/16W 18K	1	
R3248		ERJ3GEYJ681	M.RESISTOR CH1/16W 680	1	
R3249		ERJ3GEYJ182	M.RESISTOR CH1/16W 1.8K	1	
R3250		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3251,52		ERJ3GEYJ220	M.RESISTOR CH1/16W 22	2	
R3253		ERJ3GEYJ100	M.RESISTOR CH1/16W 10	1	
R3254		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3255		ERJ3GEYJ182	M.RESISTOR CH1/16W 1.8K	1	
R3256		ERJ3GEYJ100	M.RESISTOR CH1/16W 10	1	
R3258		ERJ3GEYJ680	M.RESISTOR CH1/16W 68	1	
R3259		ERJ3GEYJ182	M.RESISTOR CH1/16W 1.8K	1	
R3260		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3261,62		ERJ3GEYJ220	M.RESISTOR CH1/16W 22	2	
R3263		ERJ3GEYJ100	M.RESISTOR CH1/16W 10	1	
R3264		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3265		ERJ3GEYJ182	M.RESISTOR CH1/16W 1.8K	1	
R3266		ERJ3GEYJ100	M.RESISTOR CH1/16W 10	1	
R3267,68		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	2	
R3269		ERJ3GEYJ473	M.RESISTOR CH1/16W 47K	1	
R3270		VRE0034E221	M.RESISTOR CH 1/10W 220	1	
R3271		VRE0034E272	M.RESISTOR CH 1/10W 2.7K	1	
R3401		ERJ3GEYJ104	M.RESISTOR CH1/16W 100K	1	
R3402,03		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	2	
R3404		ERJ3GEYJ473	M.RESISTOR CH1/16W 47K	1	
R3405		ERJ3GEYJ474	M.RESISTOR CH1/16W 470K	1	
R3406,07		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	2	
R3408-10		ERJ3GEYJ473	M.RESISTOR CH1/16W 47K	3	
R3414-16		ERJ3GEYJ473	M.RESISTOR CH1/16W 47K	3	
R3424		ERJ3GEYJ472	M.RESISTOR CH1/16W 4.7K	1	
R3425		ERJ3GEYJ272	M.RESISTOR CH1/16W 2.7K	1	
R3426		ERJ3GEYJ152	M.RESISTOR CH1/16W 1.5K	1	
R3433		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	1	
R3434		ERJ3GEYJ331	M.RESISTOR CH1/16W 330	1	
R3435		ERJ3GEYJ101	M.RESISTOR CH1/16W 100	1	
R3436		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3437		ERJ3GEYJ122	M.RESISTOR CH1/16W 1.2K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R3439		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	1	
R3440		ERJ3GEYJ331	M.RESISTOR CH1/16W 330	1	
R3441		ERJ3GEYJ101	M.RESISTOR CH1/16W 100	1	
R3442		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3443		ERJ3GEYJ122	M.RESISTOR CH1/16W 1.2K	1	
R3445		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	1	
R3446		ERJ3GEYJ331	M.RESISTOR CH1/16W 330	1	
R3447		ERJ3GEYJ101	M.RESISTOR CH1/16W 100	1	
R3448		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3449		ERJ3GEYJ122	M.RESISTOR CH1/16W 1.2K	1	
R3451		ERJ3GEYJ273	M.RESISTOR CH1/16W 27K	1	
R3452		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	1	
R3453		ERJ3GEYJ683	M.RESISTOR CH1/16W 68K	1	
R3454		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	1	
R3455		ERJ3GEYJ683	M.RESISTOR CH1/16W 68K	1	
R3456,57		ERJ3GEYJ392	M.RESISTOR CH1/16W 3.9K	2	
R3458		ERJ3GEYJ681	M.RESISTOR CH1/16W 680	1	
R3459,60		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	2	
R3461-64		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	4	
R3465,66		VRE0034E473	M.RESISTOR CH 1/10W 47K	2	
R3467,68		VRE0034E103	M.RESISTOR CH 1/10W 10K	2	
R3469		VRE0034E473	M.RESISTOR CH 1/10W 47K	1	
R3470		VRE0034E103	M.RESISTOR CH 1/10W 10K	1	
R3471,72		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	2	
R3473-75		ERJ3GEYJ153	M.RESISTOR CH1/16W 15K	3	
R3476-79		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	4	
R3480		ERJ3GEYJ392	M.RESISTOR CH1/16W 3.9K	1	
R3481		ERJ3GEYJ273	M.RESISTOR CH1/16W 27K	1	
R3483		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	1	
R3484		ERJ3GEYJ683	M.RESISTOR CH1/16W 68K	1	
R3485		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	1	
R3486		ERJ3GEYJ683	M.RESISTOR CH1/16W 68K	1	
R3487		ERJ3GEYJ681	M.RESISTOR CH1/16W 680	1	
R3488		ERJ3GEYJ223	M.RESISTOR CH1/16W 22K	1	
R3489		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	1	
R3490		ERJ3GEYJ681	M.RESISTOR CH1/16W 680	1	
R3491		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	1	
R3492		ERJ3GEYJ683	M.RESISTOR CH1/16W 68K	1	
R3493,94		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	2	
R3504		ERJ3GEYJ332	M.RESISTOR CH1/16W 3.3K	1	
R3505		ERJ3GEYJ222	M.RESISTOR CH1/16W 2.2K	1	
R3506		ERJ3GEYJ392	M.RESISTOR CH1/16W 3.9K	1	
R3507		ERJ3GEYJ332	M.RESISTOR CH1/16W 3.3K	1	
R3508		ERJ3GEYJ222	M.RESISTOR CH1/16W 2.2K	1	
R3509		ERJ3GEYJ392	M.RESISTOR CH1/16W 3.9K	1	
R3510		ERJ3GEYJ332	M.RESISTOR CH1/16W 3.3K	1	
R3511		ERJ3GEYJ222	M.RESISTOR CH1/16W 2.2K	1	
R3512		ERJ3GEYJ392	M.RESISTOR CH1/16W 3.9K	1	
R3513		ERJ3GEYJ473	M.RESISTOR CH1/16W 47K	1	
R3514		ERJ3GEYJ333	M.RESISTOR CH1/16W 33K	1	
R3516		ERJ3GEYJ561	M.RESISTOR CH1/16W 560	1	
R3518		ERJ3GEYJ561	M.RESISTOR CH1/16W 560	1	
R3519		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	1	
R3520		ERJ3GEYJ101	M.RESISTOR CH1/16W 100	1	
R3521		ERJ3GEYJ222	M.RESISTOR CH1/16W 2.2K	1	
R3524		ERJ3GEYJ101	M.RESISTOR CH1/16W 100	1	
R3525		ERJ3GEYJ122	M.RESISTOR CH1/16W 1.2K	1	
R3526-28		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	3	
R3532		ERJ3GEYJ101	M.RESISTOR CH1/16W 100	1	
R3533		ERJ3GEYJ122	M.RESISTOR CH1/16W 1.2K	1	
R3534,35		ERJ3GEYJ473	M.RESISTOR CH1/16W 47K	2	
R3537		ERJ3GEYJ561	M.RESISTOR CH1/16W 560	1	
R3539		ERJ3GEYJ331	M.RESISTOR CH1/16W 330	1	
R3540		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	1	
R3541		ERJ3GEYJ101	M.RESISTOR CH1/16W 100	1	
R3542		ERJ3GEYJ222	M.RESISTOR CH1/16W 2.2K	1	
R3545		ERJ3GEYJ101	M.RESISTOR CH1/16W 100	1	
R3546		ERJ3GEYJ122	M.RESISTOR CH1/16W 1.2K	1	
R3550-52		ERJ3GEYJ562	M.RESISTOR CH1/16W 5.6K	3	
R3553		ERJ3GEYJ101	M.RESISTOR CH1/16W 100	1	
R3554		ERJ3GEYJ122	M.RESISTOR CH1/16W 1.2K	1	
R3555		ERJ3GEYJ473	M.RESISTOR CH1/16W 47K	1	
R3556		ERJ3GEYJ393	M.RESISTOR CH1/16W 39K	1	
R3558		ERJ3GEYJ561	M.RESISTOR CH1/16W 560	1	
R3560		ERJ3GEYJ561	M.RESISTOR CH1/16W 560	1	
R3561		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	1	
R3562		ERJ3GEYJ101	M.RESISTOR CH1/16W 100	1	
R3563		ERJ3GEYJ122	M.RESISTOR CH1/16W 1.2K	1	
R3566		ERJ3GEYJ101	M.RESISTOR CH1/16W 100	1	
R3567		ERJ3GEYJ122	M.RESISTOR CH1/16W 1.2K	1	
R3570		ERJ3GEYJ823	M.RESISTOR CH1/16W 82K	1	
R3571		ERJ3GEYJ684	M.RESISTOR CH1/16W 680K	1	
R3572		ERJ3GEYJ824	M.RESISTOR CH1/16W 820K	1	
R3573		ERJ3GEYJ823	M.RESISTOR CH1/16W 82K	1	
R3574		ERJ3GEYJ101	M.RESISTOR CH1/16W 100	1	
R3575		ERJ3GEYJ122	M.RESISTOR CH1/16W 1.2K	1	
R3576		ERJ3GEYJ684	M.RESISTOR CH1/16W 680K	1	
R3577		ERJ3GEYJ824	M.RESISTOR CH1/16W 820K	1	
R3578		ERJ3GEYJ823	M.RESISTOR CH1/16W 82K	1	
R3579		ERJ3GEYJ684	M.RESISTOR CH1/16W 680K	1	
R3580		ERJ3GEYJ824	M.RESISTOR CH1/16W 820K	1	
R3581		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3587-89		ERJ3GEYJ473	M.RESISTOR CH1/16W 47K	3	
R3590		ERJ3GEYJ684	M.RESISTOR CH1/16W 680K	1	
R3597		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3598,99		ERJ3GEYJ684	M.RESISTOR CH1/16W 680K	2	
R3600		ERJ3GEYJ680	M.RESISTOR CH1/16W 68	1	
R3601		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	1	
R3602-04		ERJ3GEYJ472	M.RESISTOR CH1/16W 4.7K	3	
R3607		ERJ3GEYJ472	M.RESISTOR CH1/16W 4.7K	1	
R3615		ERJ3GEYJ123	M.RESISTOR CH1/16W 12K	1	
R3616		ERJ3GEYJ183	M.RESISTOR CH1/16W 18K	1	
R3617		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	1	
R3618		ERJ3GEYJ472	M.RESISTOR CH1/16W 4.7K	1	
R3619,20		ERJ3GEYJ563	M.RESISTOR CH1/16W 56K	2	
R3623		ERJ3GEYJ123	M.RESISTOR CH1/16W 12K	1	
R3624		ERJ3GEYJ183	M.RESISTOR CH1/16W 18K	1	
R3625,26		ERJ3GEYJ104	M.RESISTOR CH1/16W 100K	2	
R3629,30		ERJ3GEYJ682	M.RESISTOR CH1/16W 6.8K	2	
R3631		ERJ3GEYJ223	M.RESISTOR CH1/16W 22K	1	
R3632		ERJ3GEYJ682	M.RESISTOR CH1/16W 6.8K	1	
R3633		ERJ3GEYJ472	M.RESISTOR CH1/16W 4.7K	1	
R3634,35		ERJ3GEYJ223	M.RESISTOR CH1/16W 22K	2	
R3636-38		ERJ3GEYJ183	M.RESISTOR CH1/16W 18K	3	
R3640		ERJ3GEYJ473	M.RESISTOR CH1/16W 47K	1	
R3642,43		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	2	
R3644-46		ERJ3GEYJ472	M.RESISTOR CH1/16W 4.7K	3	
R3648		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	1	
R3653		ERJ3GEYJ273	M.RESISTOR CH1/16W 27K	1	
R3654		ERJ3GEYJ183	M.RESISTOR CH1/16W 18K	1	
R3701-03		ERJ3GEYJ151	M.RESISTOR CH1/16W 150	3	
R3704-46		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	43	
R3747		VRE0034E181	M.RESISTOR CH 1/10W 180	1	
R3748		VRE0034E561	M.RESISTOR CH 1/10W 560	1	
R3749		VRE0034E121	M.RESISTOR CH 1/10W 120	1	
R3752		VRE0034E821	M.RESISTOR CH 1/10W 820	1	
R3753		VRE0034E562	M.RESISTOR CH 1/10W 5.6K	1	
R3754		VRE0034E822	M.RESISTOR CH 1/10W 8.20	1	
R3755		VRE0034E103	M.RESISTOR CH 1/10W 10K	1	
R3756		VRE0034E221	M.RESISTOR CH 1/10W 220	1	
R3757-59		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	3	
R3760		ERJ3GEYJ181	M.RESISTOR CH1/16W 180	1	
R3761,62		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	2	
R3764		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3765		ERJ3GEYJ220	M.RESISTOR CH1/16W 22	1	
R3766		ERJ3GEYJ181	M.RESISTOR CH1/16W 180	1	
R3767		ERJ3GEYJ332	M.RESISTOR CH1/16W 3.3K	1	
R3768		ERJ3GEYJ470	M.RESISTOR CH1/16W 47	1	
R3769		ERJ3GEYJ821	M.RESISTOR CH1/16W 820	1	
R3770		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	1	
R3771		ERJ3GEYJ332	M.RESISTOR CH1/16W 3.3K	1	
R3772		ERJ3GEYJ331	M.RESISTOR CH1/16W 330	1	
R3773		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	1	
R3774		ERJ3GEYJ332	M.RESISTOR CH1/16W 3.3K	1	
R3775		ERJ3GEYJ220	M.RESISTOR CH1/16W 22	1	
R3776,77		ERJ3GEYJ472	M.RESISTOR CH1/16W 4.7K	2	
R3778		ERJ3GEYJ223	M.RESISTOR CH1/16W 22K	1	
R3779		ERJ3GEYJ333	M.RESISTOR CH1/16W 33K	1	
R3780		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	1	
R3781		ERJ3GEYJ473	M.RESISTOR CH1/16W 47K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R3782		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	1	
R3783		ERJ3GEYJ333	M.RESISTOR CH1/16W 33K	1	
R3784		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	1	
R3785		ERJ3GEYJ682	M.RESISTOR CH1/16W 6.8K	1	
R3786,87		ERJ3GEYJ102	M.RESISTOR CH1/16W 1K	2	
R3788		ERJ3GEYJ680	M.RESISTOR CH1/16W 68	1	
R3789		ERJ3GEYJ103	M.RESISTOR CH1/16W 10K	1	
R3790		VRE0034E183	M.RESISTOR CH 1/10W 18K	1	
R3791		VRE0034E682	M.RESISTOR CH 1/10W 6.8K	1	
R3792		VRE0034E683	M.RESISTOR CH 1/10W 68K	1	
R3793		VRE0034E102	M.RESISTOR CH 1/10W 1K	1	
R3794		VRE0034E821	M.RESISTOR CH 1/10W 820	1	
R3795		VRE0034E221	M.RESISTOR CH 1/10W 220	1	
R3796		ERJ3GEYJ182	M.RESISTOR CH1/16W 1.8K	1	
R3797		VRE0034E681	M.RESISTOR CH 1/10W 680	1	
R3798		ERJ3GEYJ220	M.RESISTOR CH1/16W 22	1	
R3799		ERJ3GEYJ472	M.RESISTOR CH1/16W 4.7K	1	
R3800		VRE0034E391	M.RESISTOR CH 1/10W 390	1	
R3801		ERJ3GEYJ472	M.RESISTOR CH1/16W 4.7K	1	
R3803		ERJ3GEYJ471	M.RESISTOR CH1/16W 470	1	
R3805		ERJ3GEYJ471	M.RESISTOR CH1/16W 470	1	
R3806		ERJ3GEYJ272	M.RESISTOR CH1/16W 2.7K	1	
R3807		ERJ3GEYJ471	M.RESISTOR CH1/16W 470	1	
R3809		ERJ3GEYJ471	M.RESISTOR CH1/16W 470	1	
R3810		ERJ3GEYJ272	M.RESISTOR CH1/16W 2.7K	1	
R3811		VRE0034E470	M.RESISTOR CH 1/10W 47	1	
R3812		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3818		ERJ3GEYJ472	M.RESISTOR CH1/16W 4.7K	1	
R3819		ERJ3GEYJ181	M.RESISTOR CH1/16W 180	1	
R3820		ERJ3GEYJ473	M.RESISTOR CH1/16W 47K	1	
R3821		ERJ3GEYJ220	M.RESISTOR CH1/16W 22	1	
R3822		ERJ3GEYJ272	M.RESISTOR CH1/16W 2.7K	1	
R3823		VRE0034E822	M.RESISTOR CH 1/10W 8.20	1	
R3824		VRE0034E332	M.RESISTOR CH 1/10W 3.3K	1	
R3825		VRE0034E101	M.RESISTOR CH 1/10W 100	1	
R3826-29		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	4	
R3830		ERJ6GEYJ470	M.RESISTOR CH1/10W 47	1	
R3832		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
R3833-35		ERJ3GEYJ471	M.RESISTOR CH1/16W 470	3	
R3901		ERJ3GEYJ222	M.RESISTOR CH1/16W 2.2K	1	
R3902		ERJ3GEYJ822	M.RESISTOR CH1/16W 8.2K	1	
R3903		ERJ3GEY0R00	M.RESISTOR CH1/16W 0.00	1	
VC3001		VCV0047	TRIMMER	1	
VC3201		VCV0047	TRIMMER	1	
VR3001		EVM7JGA00B54	V.RESISTOR 50K	1	
VR3002		EVM7JGA00B14	V.RESISTOR 10K	1	
VR3004		EVM7JGA00B14	V.RESISTOR 10K	1	
VR3005		EVM7JGA00B23	V.RESISTOR 2K	1	
VR3201		EVM7JGA00B53	V.RESISTOR 5K	1	
VR3203-06		EVM7JGA00B53	V.RESISTOR 5K	4	
VR3207		EVM7JGA00B23	V.RESISTOR 2K	1	
VR3402-04		EVM7JGA00B15	V.RESISTOR 100K	3	
VR3408-10		EVM7JGA00B15	V.RESISTOR 100K	3	
VR3426-28		EVM7JGA00B53	V.RESISTOR 5K	3	
VR3701		EVM7JGA00BE2	V.RESISTOR	1	
VR3702,03		EVM7JGA00B13	V.RESISTOR 1K	2	
X3001		VSX0567A	CRYSTAL OSCILLATOR	1	<R>
X3002		VSX0338	CRYSTAL OSCILLATOR	1	<R>
X3003		VSX0081	CRYSTAL OSCILLATOR	1	<R>
X3601		EF0V8004B0A	CRYSTAL OSCILLATOR	1	<R>

REAR JACK SCHEMATIC DIAGRAM 1／2（E6:Page CBA-3）


AUDIO_+9V
[P1010-22]
R1078 39/J6
C1001 16V100
+9V
R1020
C1031 16V1/UFN
C1032 16V1/UFN
QR1001 UN2113-TW
D5V
QR1002 UN221F-TW
D1001 MA151K-TW
RY1001 VSY2036
R1004 5600/RE
R1021
L1001 10U/LA
CH1 IN
P1021
R1018
R1019
R1022 *PAT/J6
C1002 470P/UN
L1002 10U/LA
C1003 470P/UN
R1001 6800/J6
R1002 6800/J6
R1003 6800/J6
C1004 0.01
R1006 0/J6
R1005 5600/RE
R1007 220/RE
C1005 0.01
C1006 0.1
C1041 0.1
C1007 0.1
C1042 0.1
D1003 MA153-TW
D1004 MA153-TW
D1005 MA153-TW
D1006 MA153-TW
D1007 MA153-TW
D1008 MA153-TW
L1003 10U/LA
C1010 0.01
CAM_H
CAM_G
CAM_C
[P1017-1]
[P1017-2]
[P1017-3]
C1008 470P/UN
R1008 6800/J6
R1009 6800/J6
L1004 10U/LA
C1009 470P/UN
R1010 6800/J6
C1012 0.01
IC1001
UPC5022GA089
CH1_IN(C)
CH2_VCC
CAM_IN(H)
CAM_IN(C)
CH2_IN(C)
CH1_IN(H)
CH1_VCC
CH1_MIC_LINE
CH1_CAM
MONO_STEREO
CH1_OUT
MIX_OUT(H)
MIX_OUT(C)
CH1_GND
1/2VCC_OUT
CH2_OUT
CH2_IN(H)
CH2_GND
CH2_MIC_LINE
CH2_CAM
C1033 6V100/EVV
C1020 16V10/EVV
[P1010-24]
CH1_MIC
R1031 100K/J6
SW1001 VJP3579B006B
-60dB
-20dB
SW1001 VJS1940
R1029 470/J6
R1033 10/J6
C1021 16V10/EVV
[P1012-2]
AUDIO_MIX_H
R1034 47K/J6
R1030 470/J6
C1022 16V10/EVV
[P1012-4]
AUDIO_MIX_C
R1035 47K/J6
C1023 16V10/EVV
[P1010-26]
CH2_MIC
R1032 100K/J6
QR1003 UN2113-TW
QR1004 UN221F-TW
D1002 MA151K-TW
RY1002 VSY2036
J1001A
J1001B
R1025
R1026
L1005 10U/LA
R1014 5600/RE
DIG_+5V
[P1010-23]
CH2 IN
P1022
R1023
R1024
R1027 *PAT/J6
C1014 470P/UN
L1006 10U/LA
C1015 470P/UN
R1011 6800/J6
R1012 6800/J6
R1013 6800/J6
C1016 0.01
R1016 0/J6
R1015 5600/RE
R1017 220/RE
C1017 0.01
C1018 0.1
C1043 0.1
C1019 0.1
C1044 0.1
+9V
R1082 100K/J6
R1083 100K/J6
C1045 16V10/EVV
IC1007 UPC4558G2-T1
R1084 10K/J6
R1085 10K/J6
R1086 10K/J6
R1087 4700/J6
R1088 10K/J6
MIC_LOGIC2(1:11)
R1079 100/J8
C1040 63V22/EFQ
C1039 0.1/UBN
LM_SCK
SERIALD
LCD_RQ
[P1010-1]
[P1010-2]
[P1010-4]
NOREG
Q1004 2SJ245S-TR
R1028 1/J6
R1036 100K/J6
L1008 68U VLQ0407680K
L1009 68U VLQ0407680K
D1009 E10QS10TE12L
C1024 25V56/EFQ
C1025 50V3R3/EVV
R1043 100K/J6
R1044 22K/J6
R1045 22K/J6
R1041 68K/RE
C1026 63V82/EFQ
R1042 1000/RE
IC1002 LM2577MX-ADJ
R1040 680/J6
POWER_ON
[P1010-5]
R1037 10K/J6
R1038 47K/J6
R1039 3300/J6
Q1005 2SD601A-QRTW
IC1004 MM1282I-RTX
R1046 470/J6
D1010 MA151K-TW
C1027 6V33/EVV
R1048 100K/J6
R1047 1000/J6
C1034 0.1/UFN
IC1003 M50927B41FP
RESET_L
INT
AVSS
VREF
K0
K1
AVDD
S0
S1
S2
S3
D0
D1
CNVSS
VSS
VDD
CNTR
XIN
XOUT
F3/SIN
F2/SOUT
F1/CLK
F0/SRDY_L
C1028 33P/UN
X1001 VSX0128
C1029 33P/UN
R1049 1M/J6
R1050 0/J6
R1051 100/J6
R1052 100/J6
R1053 100K/J6
R1055 100K/J6
QR1005 UN2113-TW
QR1006 UN2113-TW
R1054 15K/J6
R1056 15K/J6
Q1001 2SB792-QRTW
Q1002 2SB792-QRTW
QR1007 UN2213-TW
QR1008 UN2213-TW
MONO_STEREO 5
63-2 10
63-1 11
IC1005 MC74HCU04F-R
CH2_CAM 6
CH2_MIC_LINE 7
62-2 8
62-1 9
CH1_CAM 4
CH1_MIC_LINE 3
61-2 2
61-1 1
R1063 R1058 R1057 R1064 R1065 R1059 R1060 R1066 R1067 R1061 R1062 100K/J6
MIC_LOGIC1(1:6)
IC1005 MC74HCU04F-R
EXT5PDATA
[P1010-7]
D1011 MA153-TW
R1068 100/J6
D1012 MA153-TW
R1069 100/J6
D1013 MA153-TW
R1070 100/J6
R1071 10K/J6
C1030 0.01/UBN
C1035 0.1/UFN
C1036 0.1/UFN
IC1005 MC74HCU04F-R
IC1006 MC74HC4066FR
EXT5PSCK
[P1010-6]
CTL_PULSE
[P1010-8]
R1072 2200/J6
R1074 10K/J6
Q1003 2SB970X-TX
R1073 0.025 VSF0092
D1016 MA151K-TW
D1015 MA720-TW
[P1012-1]
[P1012-10]
[P1012-11]
[P1012-9]
5P_+5V
5P_DATA
5P_SCK
5P_CTL_PULSE
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

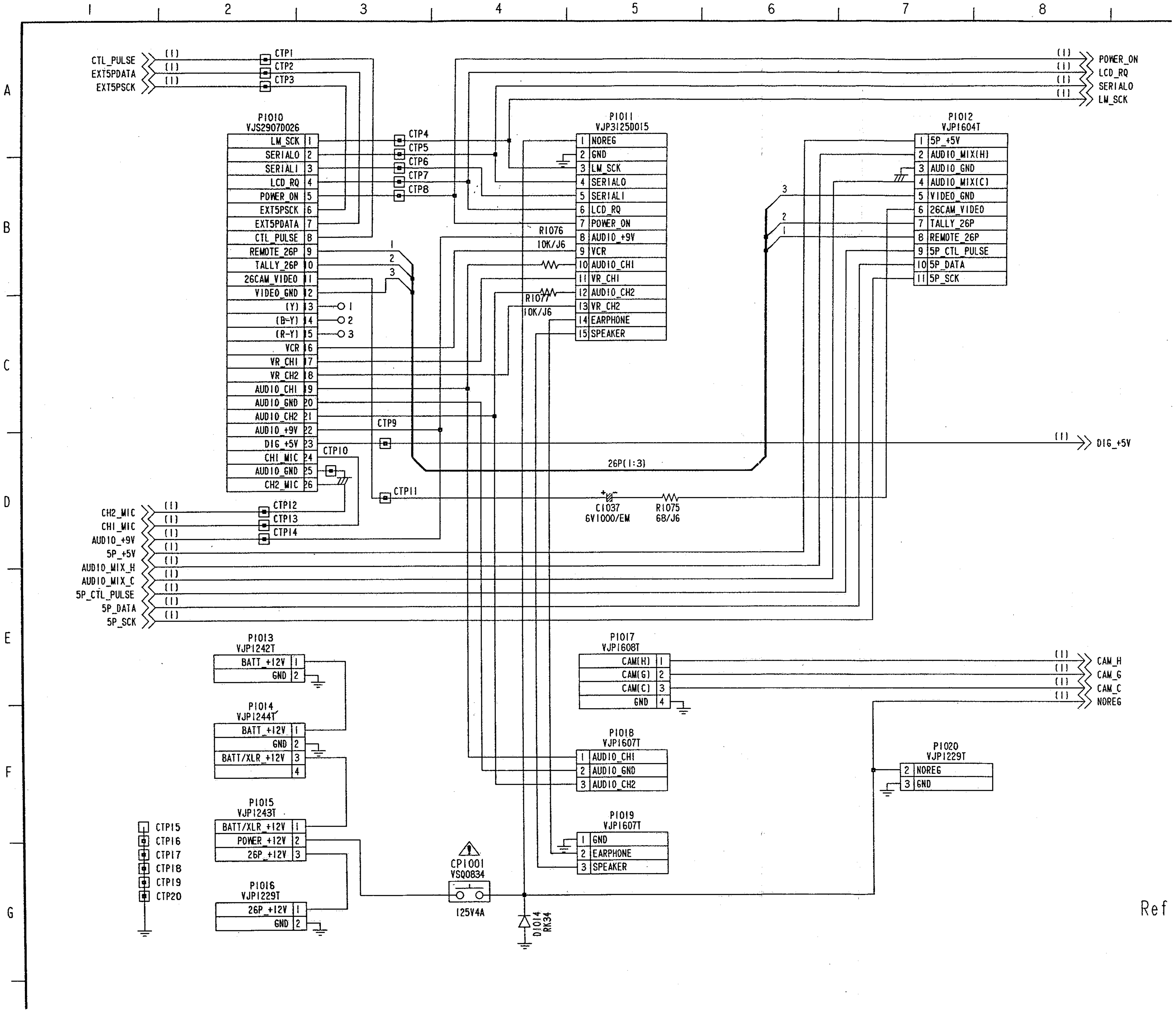
	R1018	R1019	R1020	R1021	P1021
T	0/J6	*PAT/J6	0/J6	*PAT/J6	VSP3551
P.E	*PAT/J6	0/J6	*PAT/J6	0/J6	VJS3551

	R1023	R1024	R1025	R1026	P1022
T	0/J6	*PAT/J6	0/J6	*PAT/J6	VSP3551
P.E	*PAT/J6	0/J6	*PAT/J6	0/J6	VJS3551

*=REFER TO THE COMPARISON CHART

Ref No.1000 Series.

REAR JACK SCHEMATIC DIAGRAM 2／2 (E6:Page CBA-3)

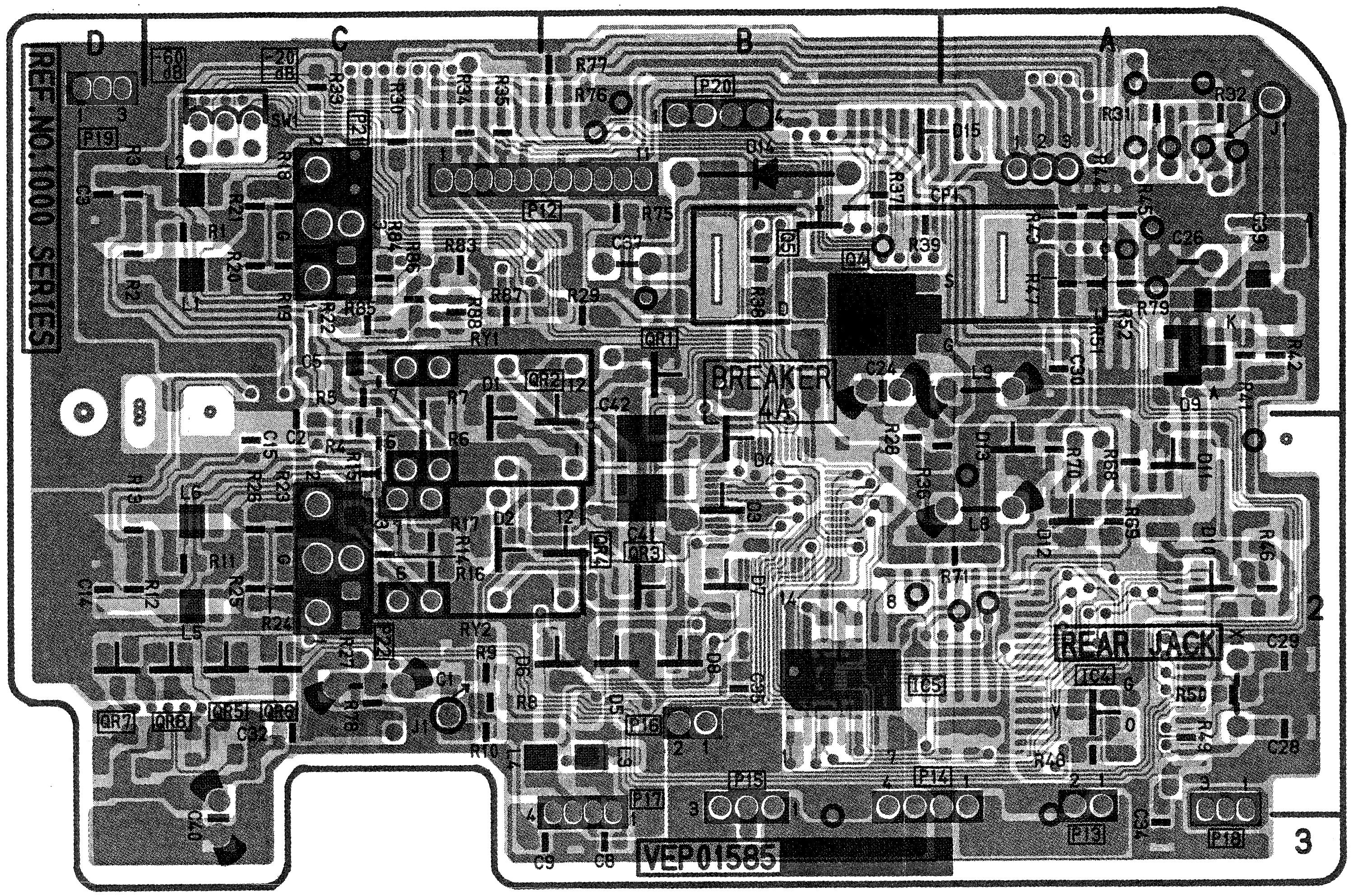

1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
CTL_PULSE
EXT5PDATA
EXT5PSCK
CTP1
CTP2
CTP3
POWER_ON
LCD_RQ
SERIALO
LM_SCK
P1010
VJS2907D026
LM_SCK 1
SERIALO 2
SERIAL1 3
LCD_RQ 4
POWER_ON 5
EXT5PSCK 6
EXT5PDATA 7
CTL_PULSE 8
REMOTE_26P 9
TALLY_26P 10
26CAM_VIDEO 11
VIDEO_GND 12
(Y) 13
(B-Y) 14
(R-Y) 15
VCR 16
VR_CH1 17
VR_CH2 18
AUDIO_CH1 19
AUDIO_GND 20
AUDIO_CH2 21
AUDIO_+9V 22
DIG_+5V 23
CH1_MIC 24
AUDIO_GND 25
CH2_MIC 26
CTP4
CTP5
CTP6
CTP7
CTP8
CTP9
CTP10
CTP11
P1011
VJP3125D015
1 NOREG
2 GND
3 LM_SCK
4 SERIALO
5 SERIAL1
6 LCD_RQ
7 POWER_ON
8 AUDIO_+9V
9 VCR
10 AUDIO_CH1
11 VR_CH1
12 AUDIO_CH2
13 VR_CH2
14 EARPHONE
15 SPEAKER
R1076
10K/J6
R1077
10K/J6
P1012
VJP1604T
1 5P_+5V
2 AUDIO_MIX(H)
3 AUDIO_GND
4 AUDIO_MIX(C)
5 VIDEO_GND
6 26CAM_VIDEO
7 TALLY_26P
8 REMOTE_26P
9 5P_CTL_PULSE
10 5P_DATA
11 5P_SCK
26P(1:3)
DIG_+5V
C1037
6V1000/EM
R1075
68/J6
CH2_MIC
CH1_MIC
AUDIO_+9V
5P_+5V
AUDIO_MIX_H
AUDIO_MIX_C
5P_CTL_PULSE
5P_DATA
5P_SCK
CTP12
CTP13
CTP14
(1)
P1013
VJP1242T
BATT_+12V 1
GND 2
P1014
VJP1244T
BATT_+12V 1
GND 2
BATT/XLR_+12V 3
4
P1015
VJP1243T
BATT/XLR_+12V 1
POWER_+12V 2
26P_+12V 3
P1016
VJP1229T
26P_+12V 1
GND 2
CTP15
CTP16
CTP17
CTP18
CTP19
CTP20
CP1001
VSQ0834
125V4A
D1014
RK34
P1017
VJP1608T
CAM(H) 1
CAM(G) 2
CAM(C) 3
GND 4
CAM_H
CAM_G
CAM_C
NOREG
P1018
VJP1607T
1 AUDIO_CH1
2 AUDIO_GND
3 AUDIO_CH2
P1019
VJP1607T
1 GND
2 EARPHONE
3 SPEAKER
P1020
VJP1229T
2 NOREG
3 GND

REAR JACK COMPARSION CHART

REF	D190-T	D190-PE
R1018	0/J6	*PAT/J6
R1019	*PAT/J6	0/J6
R1020	0/J6	*PAT/J6
R1021	*PAT/J6	0/J6
R1022	*PAT/J6	*PAT/J6
R1023	0/J6	*PAT/J6
R1024	*PAT/J6	0/J6
R1025	0/J6	*PAT/J6
R1026	*PAT/J6	0/J6
R1027	*PAT/J6	*PAT/J6
P1021	VJP3551	VJS3551
P1022	VJP3551	VJS3551

Ref No.1000 Series.

REAR JACK C.B.A.(E6)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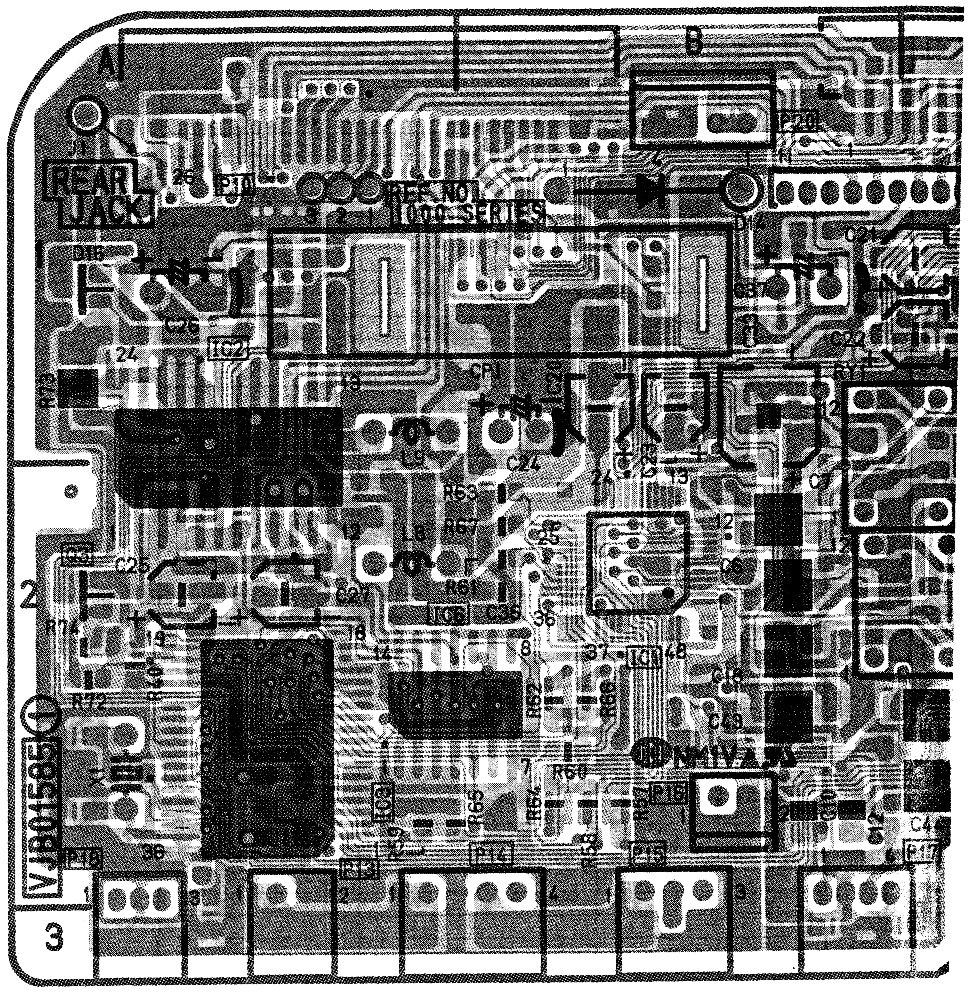
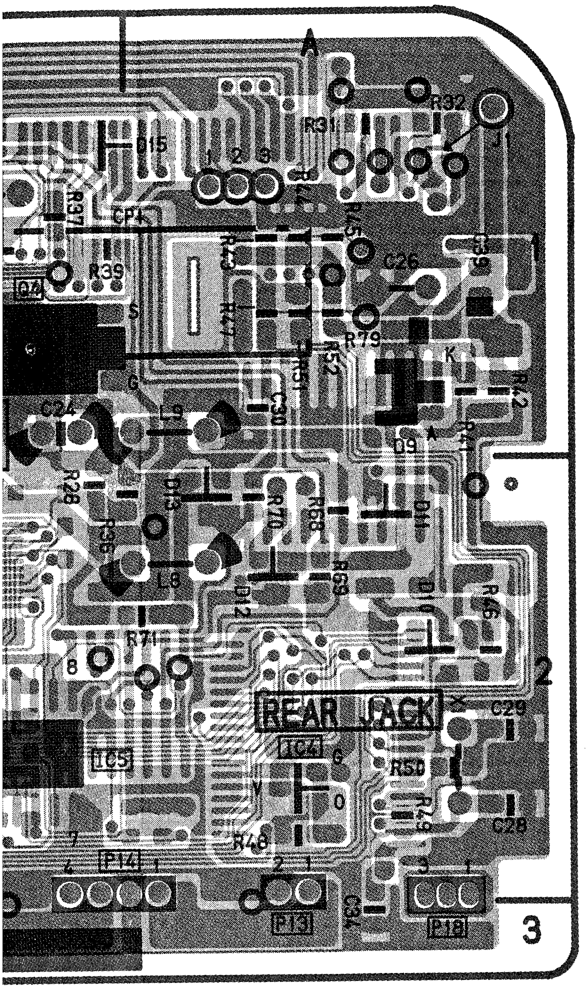
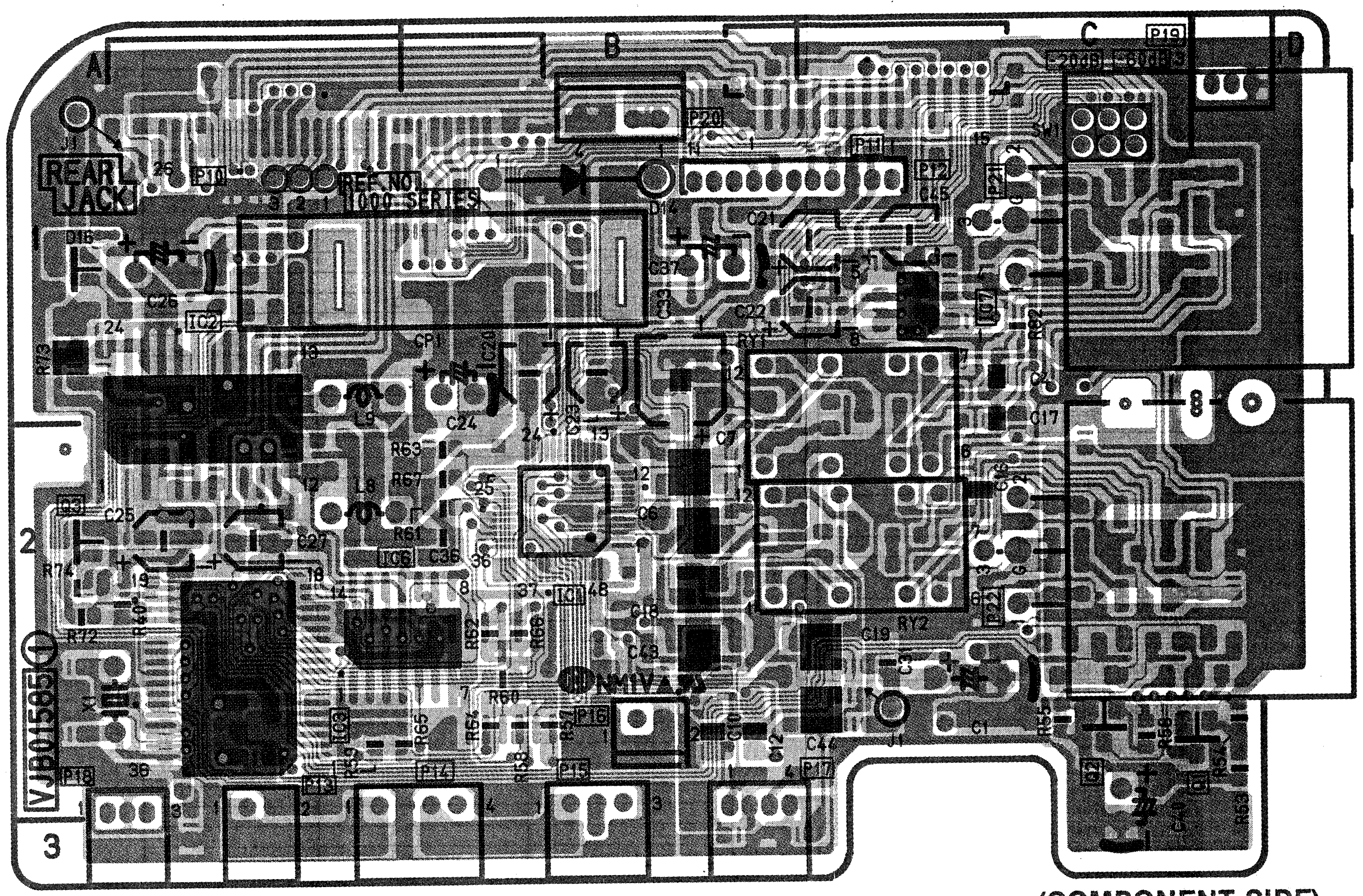
BREAKER 4A
REAR JACK
VEP01585
A
B
C
D
2
3
P19
P20
P12
P13
P14
P15
P16
P17
P18
IC4
IC5
RY1
RY2
J1

(FOIL SIDE)


REAR JACK
REF.NO.1000 SERIES
VJB01585
A
B
2
3
P20
IC2
IC6
P18
P13
P14
P15
P16
P17


A
REAR JACK
P13
P14
P18
2
3

(FOIL SIDE)


A
B
C
D
REAR JACK
REF NO 1000 SERIES
VJB01585
J1
RY1
RY2
1
2
3

(COMPONENT SIDE)

REAR JACK C.B.A.		
Transistor		
Q1001	C-2	Ⓒ
Q1002	C-2	Ⓒ
Q1003	A-2	Ⓒ
Q1004	B-1	Ⓕ
Q1005	B-1	Ⓕ
Transistor & Resistor		
QR1001	B-1	Ⓕ
QR1002	C-1	Ⓕ
QR1003	B-2	Ⓕ
QR1004	B-2	Ⓕ
QR1005	C-2	Ⓕ
QR1006	C-2	Ⓕ
QR1007	D-2	Ⓕ
QR1008	C-2	Ⓕ
Integrated Circuit		
IC1001	B-2	Ⓒ
IC1002	A-1	Ⓒ
IC1003	A-2	Ⓒ
IC1004	A-2	Ⓕ
IC1005	B-2	Ⓕ
IC1006	A-2	Ⓒ
IC1007	C-1	Ⓒ
Connector		
P1010	A-1	Ⓒ
P1011	C-1	Ⓒ
P1012	B-1	Ⓕ
P1012	C-1	Ⓒ
P1013	A-3	Ⓕ
P1013	A-2	Ⓒ
P1014	B-2	Ⓕ
P1014	B-2	Ⓒ
P1015	B-2	Ⓕ
P1015	B-2	Ⓒ
P1016	B-2	Ⓕ
P1016	B-2	Ⓒ
P1017	B-2	Ⓕ
P1017	C-3	Ⓒ
P1018	A-3	Ⓕ
P1018	A-3	Ⓒ
P1019	D-1	Ⓕ
P1019	C-1	Ⓒ
P1020	B-1	Ⓕ
P1020	B-1	Ⓒ
P1021	C-1	Ⓕ
P1021	C-1	Ⓒ
P1022	C-2	Ⓒ
P1022	C-2	Ⓒ

ADDRESS INFORMATION
Ⓕ...FOIL SIDE
Ⓒ...COMPONENT SIDE

ELECTRICAL PARTS LIST

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
	VEP01585B	P.C.BOARD W/COMPONENT		
		JACK		
		CAPACITORS		
C1001	ECA1CM102	E.CAPACITOR 16V 1000U	1	
C1002,03	ECUM1H471JCN	C.CAPACITOR CH 50V 470P	2	
C1004,05	ECHU1H103JB5	P.CAPACITOR 50V 0.01U	2	
C1006,07	ECHU1H104JB	P.CAPACITOR 50V 0.1U	2	
C1008,09	ECUM1H471JCN	C.CAPACITOR CH 50V 470P	2	
C1010	ECHU1H103JB5	P.CAPACITOR 50V 0.01U	1	
C1012	ECHU1H103JB5	P.CAPACITOR 50V 0.01U	1	
C1014,15	ECUM1H471JCN	C.CAPACITOR CH 50V 470P	2	
C1016,17	ECHU1H103JB5	P.CAPACITOR 50V 0.01U	2	
C1018,19	ECHU1H104JB	P.CAPACITOR 50V 0.1U	2	
C1020-23	ECEV1CV100Q	E.CAPACITOR 16V 10U	4	
C1024	ECA1EFQ560	E.CAPACITOR 25V 56U	1	
C1025	ECEV1HV3R3Q	E.CAPACITOR 50V 3.3U	1	
C1026	ECA1JFQ820	E.CAPACITOR 63V 82U	1	
C1027	ECEV0JV330Q	E.CAPACITOR 6.3V 33U	1	
C1028,29	ECUM1H330JCN	C.CAPACITOR CH 50V 33P	2	
C1030	ECUM1H103KBN	C.CAPACITOR CH 50V 0.01U	1	
C1031,32	ECUM1C105ZFN	C.CAPACITOR CH 16V 1U	2	
C1033	ECEV0JV101Q	E.CAPACITOR 6.3V 100U	1	
C1034-36	ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	3	
C1037	ECA0JM102	E.CAPACITOR 6.3V 1000U	1	
C1039	ECUM1H104KBM	C.CAPACITOR CH 50V 0.1U	1	
C1040	ECA1JFQ220	E.CAPACITOR 63V 22U	1	
C1041-44	ECHU1H104JB	P.CAPACITOR 50V 0.1U	4	
C1045	ECEV1CV100Q	E.CAPACITOR 16V 10U	1	
CP1001	VSQ0834	CIRCUIT PROTECTER	1	
D1001,02	MA151K	DIODE	2	<R>
D1003-08	MA153	DIODE	6	<R>
D1009	E10QS10	DIODE	1	<R>
D1010	MA151K	DIODE	1	<R>
D1011-13	MA153	DIODE	3	<R>
D1014	RK34	DIODE	1	<R>
D1015	MA720	DIODE	1	<R>
D1016	MA151K	DIODE	1	<R>
IC1001	UPC5022GA089	IC	1	<R>
IC1002	LM2577MX-ADJ	IC	1	<R>
IC1003	M50927841FP	IC	1	<R>
IC1004	MN12821R	IC	1	<R>
IC1005	MC74HCU04F	IC	1	<R>
IC1006	MC74HC4066F	IC	1	<R>
IC1007	UPC4558G2	IC	1	<R>
L1008,09	VLQ0407680K	COIL 68UH	2	
P1010	VJS2907B026	CONNECTOR (FEMALE)	1	
P1011	VJP3125D015	CONNECTOR (MALE)	1	
P1012	VJP1604T	CONNECTOR (MALE)	1	
P1013	VJP1242T	CONNECTOR (MALE)	1	
P1014	VJP1244T	CONNECTOR (MALE)	1	
P1015	VJP1243T	CONNECTOR (MALE)	1	
P1016	VJP1229T	CONNECTOR (MALE)	1	
P1017	VJP1608T	CONNECTOR (MALE)	1	
P1018,19	VJP1607T	CONNECTOR (MALE)	2	
P1020	VJP1242T	CONNECTOR (MALE)	1	
P1021,22	VJS3551	CONNECTOR (FEMALE)	2	
Q1001,02	2SB792-QR	TRANSISTOR	2	<R>
Q1003	2SB970X	TRANSISTOR	1	<R>
Q1004	2SJ245S	TRANSISTOR	1	<R>
Q1005	2SD601A-R	TRANSISTOR	1	<R>
QR1001	UN2113	TRANSISTOR-RESISTOR	1	<R>
QR1002	UN221F	TRANSISTOR-RESISTOR	1	<R>
QR1003	UN2113	TRANSISTOR-RESISTOR	1	<R>
QR1004	UN221F	TRANSISTOR-RESISTOR	1	<R>
QR1005,06	UN2113	TRANSISTOR-RESISTOR	2	<R>
QR1007,08	UN2213	TRANSISTOR-RESISTOR	2	<R>
		RESISTORS		
R1001-03	ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	3	
R1004,05	VRE0034E562	M.RESISTOR CH 1/10W 5.6K	2	
R1006	ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
R1007	VRE0034E221	M.RESISTOR CH 1/10W 220	1	
R1008-13	ERJ6GEYJ682	M.RESISTOR CH1/10W 6.8K	6	
R1014,15	VRE0034E562	M.RESISTOR CH 1/10W 5.6K	2	
R1016	ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
R1017	VRE0034E221	M.RESISTOR CH 1/10W 220	1	
R1019	ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
R1021	ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
R1024	ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
R1026	ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
R1028	ERJ6GEYK1R0	M.RESISTOR CH1/10W 1.0	1	
R1029,30	ERJ6GEYJ471	M.RESISTOR CH1/10W 470	2	
R1031,32	ERJ6GEYJ104	M.RESISTOR CH1/10W 100K	2	
R1033	ERJ6GEYJ100	M.RESISTOR CH1/10W 10	1	
R1034,35	ERJ6GEYJ473	M.RESISTOR CH1/10W 47K	2	
R1036	ERJ6GEYJ104	M.RESISTOR CH1/10W 100K	1	
R1037	ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R1038	ERJ6GEYJ473	M.RESISTOR CH1/10W 47K	1	
R1039	ERJ6GEYJ332	M.RESISTOR CH1/10W 3.3K	1	
R1040	ERJ6GEYJ681	M.RESISTOR CH1/10W 680	1	
R1041	VRE0034E683	M.RESISTOR CH 1/10W 68K	1	
R1042	VRE0034E182	M.RESISTOR CH 1/10W 1.8K	1	
R1043	ERJ6GEYJ104	M.RESISTOR CH1/10W 100K	1	
R1044,45	ERJ6GEYJ223	M.RESISTOR CH1/10W 22K	2	
R1046	ERJ6GEYJ471	M.RESISTOR CH1/10W 470	1	
R1047	ERJ6GEYJ102	M.RESISTOR CH1/10W 1K	1	
R1048	ERJ6GEYJ104	M.RESISTOR CH1/10W 100K	1	
R1049	ERJ6GEYJ105	M.RESISTOR CH1/10W 1M	1	
R1050	ERJ6GEY0R00	M.RESISTOR CH1/10W 0.00	1	
R1051,52	ERJ6GEYJ101	M.RESISTOR CH1/10W 100	2	
R1053	ERJ6GEYJ104	M.RESISTOR CH1/10W 100K	1	
R1054	ERJ6GEYJ155	M.RESISTOR CH1/10W 1.5M	1	
R1055	ERJ6GEYJ104	M.RESISTOR CH1/10W 100K	1	
R1056	ERJ6GEYJ155	M.RESISTOR CH1/10W 1.5M	1	
R1057-67	ERJ6GEYJ104	M.RESISTOR CH1/10W 100K	11	
R1068-70	ERJ6GEYJ101	M.RESISTOR CH1/10W 100	3	
R1071	ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R1072	ERJ6GEYJ222	M.RESISTOR CH1/10W 2.2K	1	
R1073	VSF0092	F.RESISTOR	1	
R1074	ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	
R1075	ERJ6GEYG680	M.RESISTOR CH1/10W 68	1	
R1076,77	ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	2	
R1078	ERJ6GEYJ390	M.RESISTOR CH1/10W 39	1	
R1079	ERJ8GCYJ101	M.RESISTOR CH 1/8W 100	1	
R1082,83	ERJ6GEYJ184	M.RESISTOR CH1/10W 180K	2	
R1084-86	ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	3	
R1087	ERJ6GEYJ472	M.RESISTOR CH1/10W 4.7K	1	
R1088	ERJ6GEYJ103	M.RESISTOR CH1/10W 10K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
RY1001,02	VSY2036	RELAY	2	
SW1001	VJP3579B006B	CONNECTOR (MALE)	1	<R>
X1001	VSX0128	CRYSTAL OSCILLATOR	1	<R>
		MISCELLANEOUS		
	VMP3789	P.C.B. HOLDER ANGLE	1	
	XYN26+K6	SCREW	1	
	VJS1940	CONNECTOR SWITCH	2	

VA1496

Order No. VSD9710S201
D4

! Warning
This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advice non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service manual by anyone else could result in serious injury or death.

Service Manual

Supplement

NTSC/PAL **Video Product**

Subject : Adjustment Procedures by PC-EVR

Please use this supplement together with the Service Manual as follows :

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	61	VSD9406M252A/B	First Production
AG-DP800HP	64	VSD9406M252C	First Production
AG-DP800E	50	VSD9408M636A/B	First Production
AG-DP800HE	54	VSD9408M636C	First Production
AG-DP800HEG	48	VSD9408M636C	First Production

This supplement introduces the adjustment procedures by PC-EVR.

The following items can be adjusted by PC-EVR.

7-2-9. Y Gain Adjustment
7-2-20. 9dB AGC R.B Level Adjustment
7-2-21. 18dB AGC R.B Level Adjustment
7-2-22. 24dB AGC R.B Level Adjustment
7-2-24. ABB Offset Adjustment

Furthermore ALC (Auto Lens iris Control) Level can be adjusted by PC-EVR.

TZZ-0061

Panasonic

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1–3. Ending Method ········ 7

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1-1. CONNECTION

※ This section describes the connection of adjustments by PC-EVR.

※ Be careful not to short-circuit when connecting.

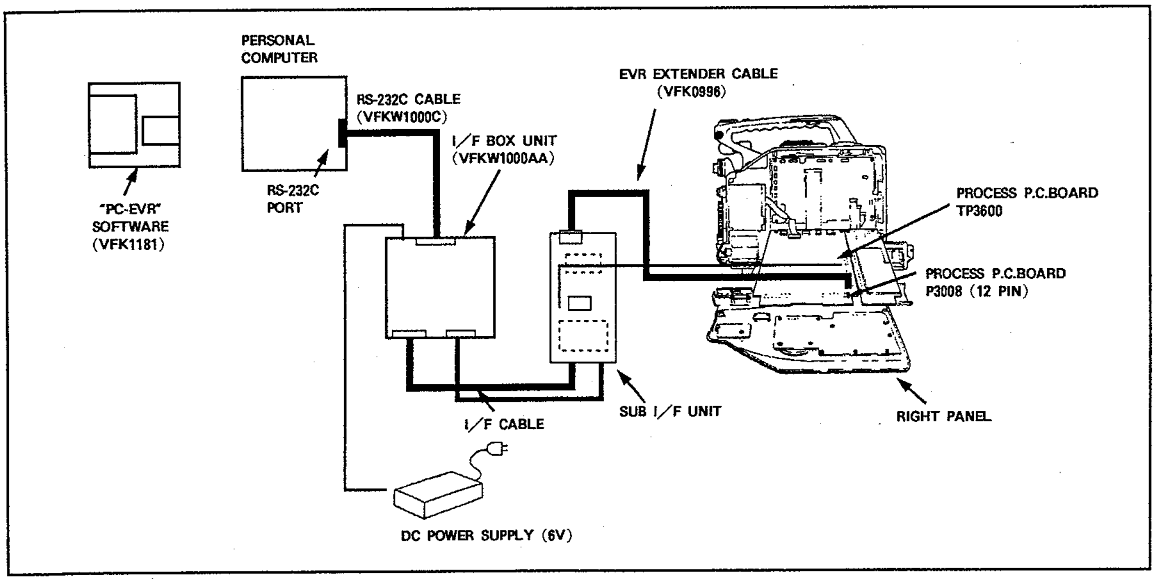
※ Personal Computer and DC Power Supply (6V) are required for adjustments by PC-EVR.
Personal Computer : IBM compatible, CPU i80386 (or higher) with 1 Mbyte RAM (or higher)

STEP 1 PREPARATION

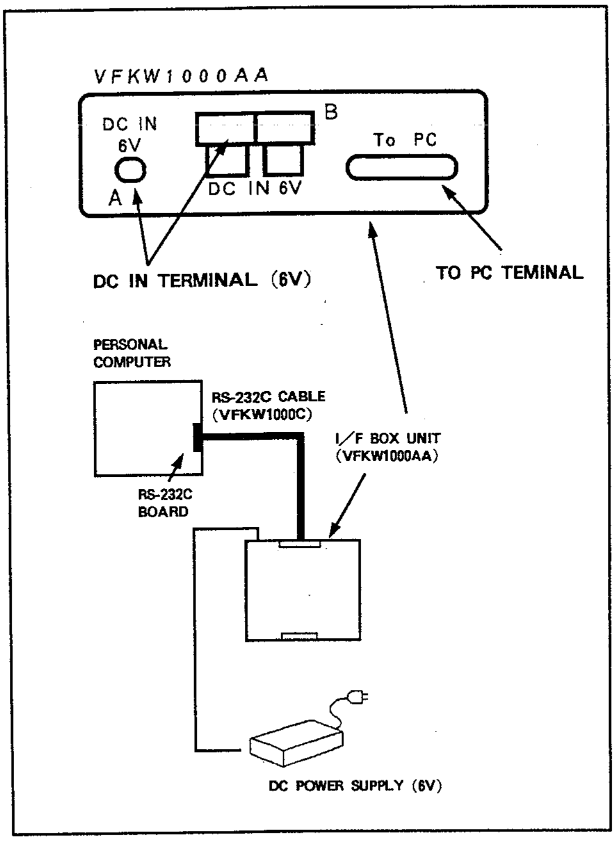
Prepare the following service & test equipments for PC-EVR adjustments.

※ These are for PC-EVR adjustments. Please refer to the service manual of AG-DP800 concerning other service & test equipments.

• I/F BOX UNIT	(VFKW1000AA)
• SUB I/F UNIT	(VFK1180)
• EVR EXTENDER CABLE	(VFK0996)
• RS-232C CABLE	(VFKW1000C)
• "PC-EVR" SOFTWARE	(VFK1181)


"PC-EVR" SOFTWARE (VFK1181)
PERSONAL COMPUTER
RS-232C PORT
RS-232C CABLE (VFKW1000C)
I/F BOX UNIT (VFKW1000AA)
EVR EXTENDER CABLE (VFK0996)
PROCESS P.C.BOARD TP3600
PROCESS P.C.BOARD P3008 (12 PIN)
I/F CABLE
SUB I/F UNIT
RIGHT PANEL
DC POWER SUPPLY (6V)

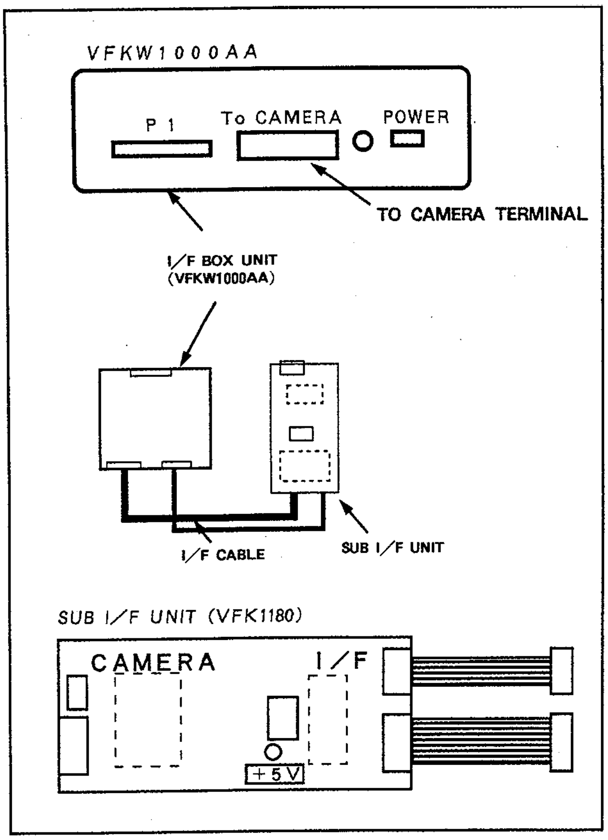
STEP 2


VFKW1000AA
DC IN 6V
A
B
DC IN 6V
To PC
DC IN TERMINAL (6V)
TO PC TEMINAL
PERSONAL COMPUTER
RS-232C CABLE (VFKW1000C)
RS-232C BOARD
I/F BOX UNIT (VFKW1000AA)
DC POWER SUPPLY (6V)

1. Connect the "TO PC" terminal of I/F BOX UNIT to the RS-232C terminal of personal computer with the RS-232C cable.
   ※ Refer to the operating instructions of personal computer concerning the RS-232C of personal computer.

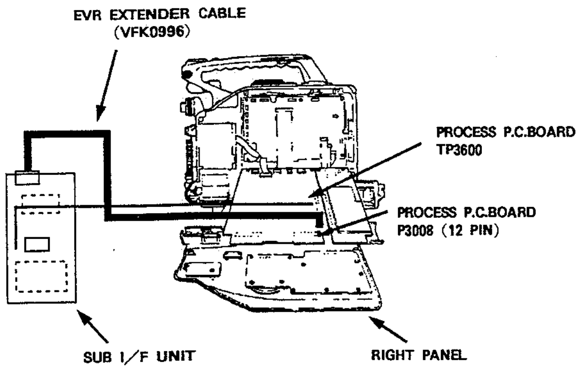
2. Connect the DC POWER SUPPLY (6V) to the DC IN 6V terminal (A or B) of I/F BOX UNIT.

STEP 3

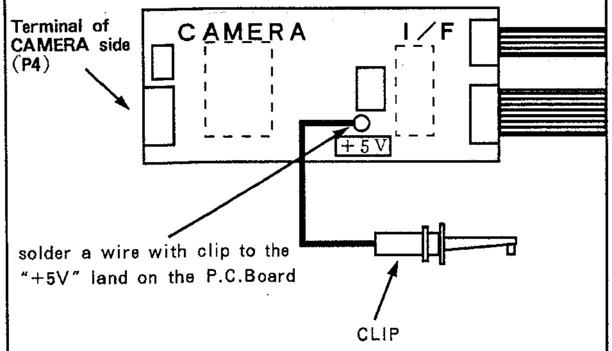

VFKW1000AA
P 1
To CAMERA
POWER
TO CAMERA TERMINAL
I/F BOX UNIT (VFKW1000AA)
I/F CABLE
SUB I/F UNIT
SUB I/F UNIT (VFK1180)
CAMERA
I/F
+5V

1. Connect the I/F cable (7P) of SUB I/F UNIT to "TO CAMERA" terminal of I/F BOX UNIT.
2. Connect the I/F cable (15p) of SUB I/F UNIT to the "P1" terminal of I/F BOX UNIT.

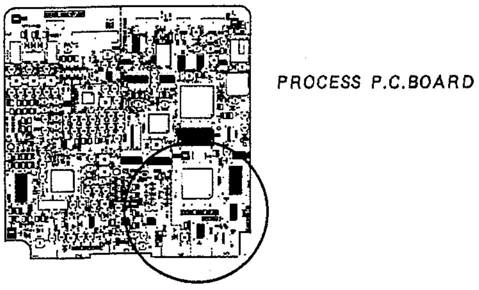
STEP 4

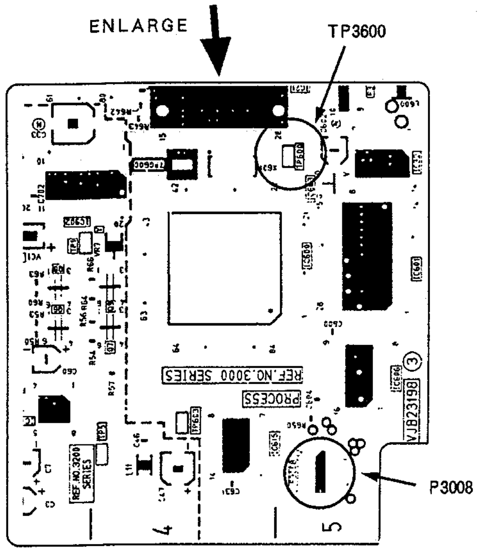

EVR EXTENDER CABLE
(VFK0996)
PROCESS P.C.BOARD
TP3600
PROCESS P.C.BOARD
P3008 (12 PIN)
SUB I/F UNIT
RIGHT PANEL

SUB I/F UNIT (VFK1180)


Terminal of
CAMERA side
(P4)
CAMERA
I/F
+5V
solder a wire with clip to the
"+5V" land on the P.C.Board
CLIP

INSIDE OF AG-DP800 ▲


PROCESS P.C.BOARD


ENLARGE
TP3600
P3008

※ Be sure to turn off each equipment when connecting.

1. Solder a wire with clip to the "+5V" land on the P.C.Board of SUB I/F UNIT.

2. Connect the EVR EXTENDER CABLE to the P4 terminal (6pin) at the "CAMERA" side of SUB I/F UNIT.

3. Connect the connector (12pin) of EVR EXTENDER CABLE to the connector P3008 on the PROCESS P.C.BOARD.

4. Connect the clip with a wire (soldered to the "5V" land) to TP3600 on the PROCESS P.C.Board.

1-2. How to start the PC-EVR Software

※ This section describes the procedures of starting the software "PC-EVR for AG-DP800 Ver1.1".

※ When using other Version, refer to the operating instructions or document file attached to the software.

STEP 1 Power ON

1. Power on the personal computer.

↓

1-2. Start MS-DOS.

↓

2. Power on the I/F UNIT.

↓

3. Power on the AG-DP800.

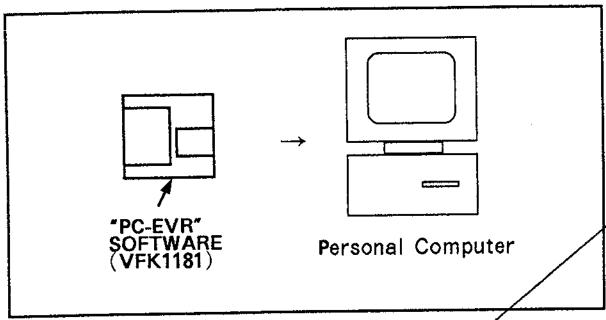
1. Power on each equipment according to the left chart.

※ Before power on, confirm that each equipment is connected correctly and there is no short-circuit.

※ Concerning MS-DOS, prepare by yourself and refer to the operating instructions of the personal computer or the MS-DOS.

Note : The PC-EVR software doesn't work at the MS-DOS mode of Windows 95.

STEP 2 Start the PC-EVR Software.



1. Set the floppy disk to the personal computer.
2. In the condition that the "Prompt" appears, input "A : \" and press Enter key.
   By performing this procedure, the driver changes from C to A.

3. Input "PC-ADJ01" (for NTSC) or "PC-ADJ02" (for PAL) and press Enter key, then the PC-EVR Software starts.

※ The above explanation is in the case that the personal computer starts the MS-DOS at the driver "C" and the floppy disk of the PC-EVR Software is set at the driver "A".

※ If the composition of personal computer is different from the above one, apply the above operation to the corresponding driver.

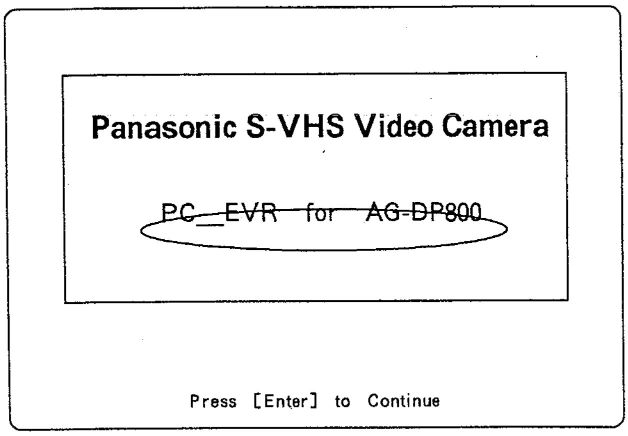
Screen of Personal Computer (NTSC)

```
C :\>  A :\
A :\>  PC-ADJ01
```

Screen of Personal Computer (PAL)

```
C :\>  A :\
A :\>  PC-ADJ02
```

STEP 3 Starting Display



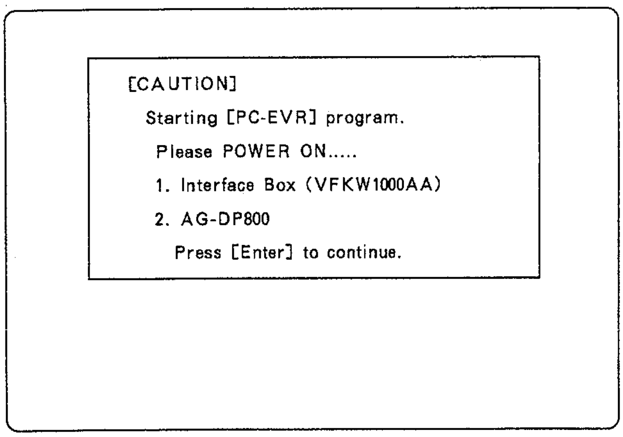
Panasonic S-VHS Video Camera

~~PC_EVR for AG-DP800~~

Press [Enter] to Continue

1. The display shown in the left figure appears 2 or 3 minutes after starting.
2. Press the Enter key.

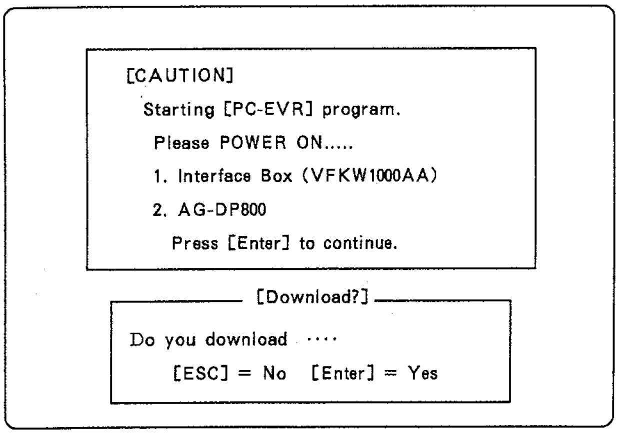
STEP 4



```
[CAUTION]
  Starting [PC-EVR] program.
    Please POWER ON.....
    1. Interface Box (VFKW1000AA)
    2. AG-DP800
       Press [Enter] to continue.
```

1. The display shown in the left figure appears.
2. After Power ON the I/F UNIT and the AG-DP800, press the Enter key.

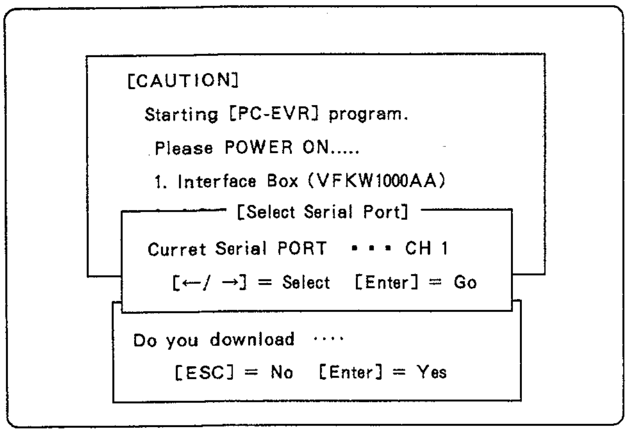
STEP 5



```
[CAUTION]
  Starting [PC-EVR] program.
    Please POWER ON.....
    1. Interface Box (VFKW1000AA)
    2. AG-DP800
       Press [Enter] to continue.

          [Download?]
  Do you download ····
      [ESC] = No    [Enter] = Yes
```

1. Press the Enter key after the display shown in the left figure has appeared.

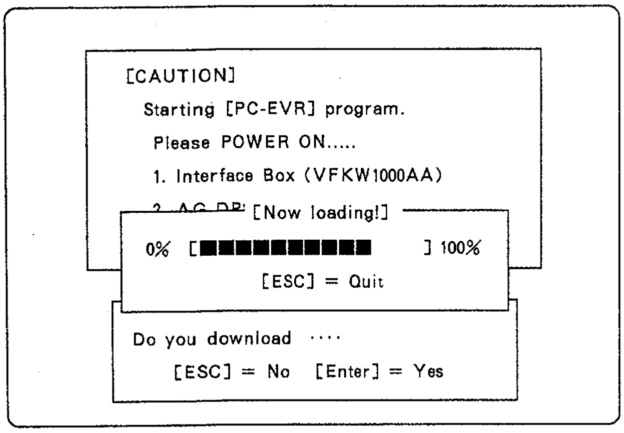
STEP 6 Select RS-232C port



```
[CAUTION]
  Starting [PC-EVR] program.
   Please POWER ON.....
  1. Interface Box (VFKW1000AA)
        [Select Serial Port]
  Curret Serial PORT  • • • CH 1
    [←/ →] = Select   [Enter] = Go

Do you download  ····
    [ESC] = No   [Enter] = Yes
```

1. The display shown in the left figure appears.
2. Select the RS-232C port to which the RS-232C cable is connected by the [←] and [→] keys.
3. Press the Enter key.

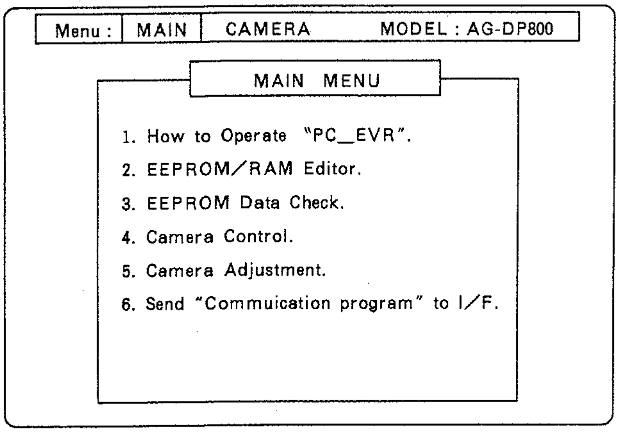
STEP 7 Loading of software



```
[CAUTION]
  Starting [PC-EVR] program.
   Please POWER ON.....
  1. Interface Box (VFKW1000AA)
        [Now loading!]
  0% [███████████          ] 100%
            [ESC] = Quit

Do you download  ····
    [ESC] = No   [Enter] = Yes
```

1. The bar shown in the left figure appears. And it is extending from "0%" to "100%".
2. When the bar has reached to "100%" and the loading of software has been successed, the main menu shown in STEP 8 appears.
3. When the bar has not reached to "100%" and stopped on the way, operate as follows.
   a. End the loading of software by pressing ESC key.
   b. Power off the AG-DP800 and the I/F unit.
   (It is unnecessary to power off the personal computer.)
   c. Try again from STEP 2.
   (Start again after confirming the connection between each instrument, the number of RS-232C port, and so on.)

STEP 8 Main Menu



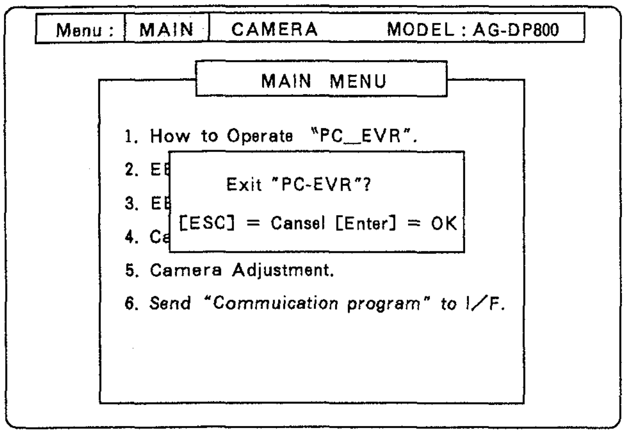
```
Menu : | MAIN | CAMERA        MODEL : AG-DP800
                MAIN  MENU
  1. How to Operate "PC_EVR".
  2. EEPROM/RAM Editor.
  3. EEPROM Data Check.
  4. Camera Control.
  5. Camera Adjustment.
  6. Send "Commuication program" to I/F.
```

1. The Main Menu appears.
   1. How to Operate "PC-EVR".
      - Explanation of operating "PC-EVR"
   2. EEPROM/RAM Editor.
      - Reading and writing the data of EEPROM/RAM
   3. EEPROM Data Check.
      - Writing the EEPROM data to the floppy disk and reading the EEPROM data from the floppy disk
   4. Camera Control.
      - Remote control of the CAMERA part
   5. Camera Adjustment.
      - Adjustment of the CAMERA part
   6. Send "Communication program" to I/F.
      - Re-transmission of communication program.

1-3. Ending Method

- The ending method of PC-EVR is as follows.

STEP 1



Menu : MAIN CAMERA MODEL : AG-DP800

MAIN MENU

1. How to Operate "PC_EVR".
2. E
3. E
4. C
5. Camera Adjustment.
6. *Send "Commuication program" to I/F.*

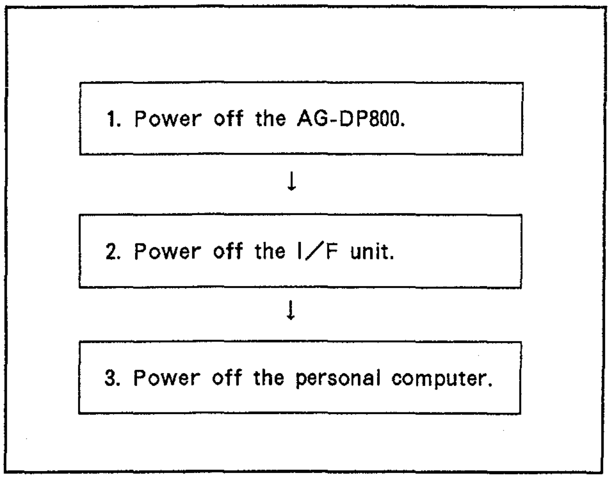
Exit "PC-EVR"?

[ESC] = Cansel [Enter] = OK

1. Press the ESC key when the Main Menu or the CAMERA Adjustment Menu is displayed. Then the display shown in the left figure appears.

2. The PC-EVR ends by pressing the Enter key.
   On the contrary, the display returns to to the Main Menu by pressing not the Enter key but the ESC key.

STEP 2



1. Power off the AG-DP800.
2. Power off the I/F unit.
3. Power off the personal computer.

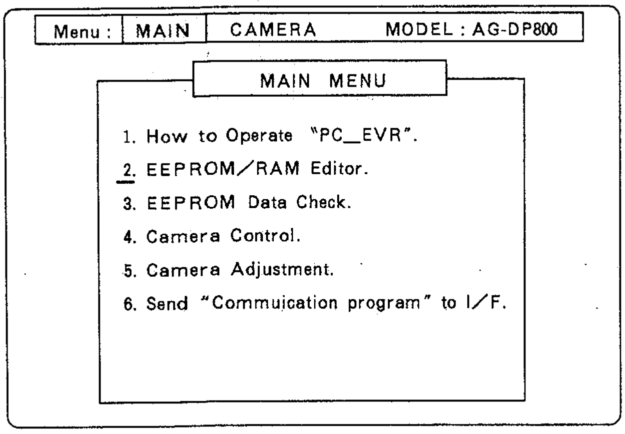
1. Power off the instruments according to the sequence shown in the left figure.

2. Remove the cables and the service & test equipments.

2. Reading and Writing of EEPROM／RAM Data

- Confirmation (reading) of EEPROM and RAM Data or changing them to certain data (writing) can be done as follows.
- This operation can be used to change the EEPROM's own data, and so on.

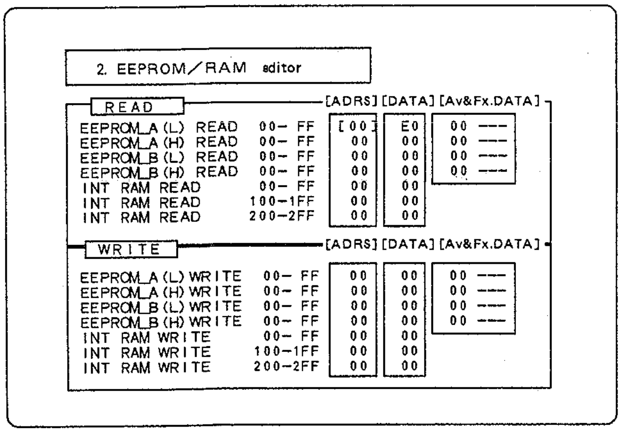
STEP 1



```
Menu : | MAIN | CAMERA          MODEL : AG-DP800

                 MAIN  MENU

   1. How to Operate  "PC_EVR".
   2. EEPROM／RAM Editor.
   3. EEPROM Data Check.
   4. Camera Control.
   5. Camera Adjustment.
   6. Send "Commuication program" to I／F.
```

1. Open the Main Menu.
2. Select the "2. EEPROM／RAM Editor". (Move the "_" mark to the "2." position and press the Enter key.)

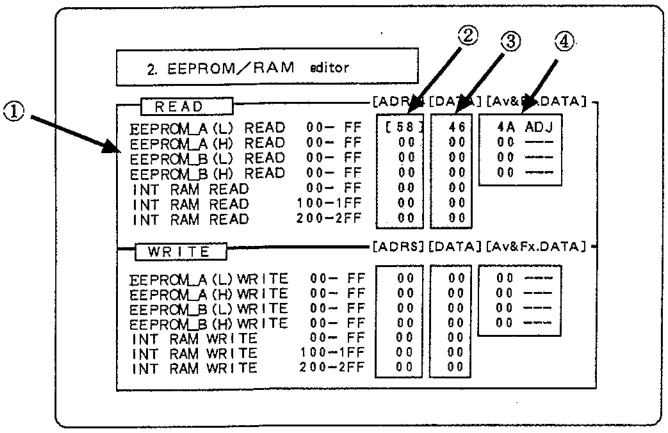
STEP 2



```
 2. EEPROM／RAM  editor

 READ                         [ADRS] [DATA] [Av&Fx.DATA]
 EEPROM_A (L)  READ   00- FF  [00]    E0     00 ---
 EEPROM_A (H)  READ   00- FF   00     00     00 ---
 EEPROM_B (L)  READ   00- FF   00     00     00 ---
 EEPROM_B (H)  READ   00- FF   00     00     00 ---
  INT  RAM  READ      00- FF   00     00
  INT  RAM  READ     100-1FF   00     00
  INT  RAM  READ     200-2FF   00     00

 WRITE                        [ADRS] [DATA] [Av&Fx.DATA]
 EEPROM_A (L) WRITE   00- FF   00     00     00 ---
 EEPROM_A (H) WRITE   00- FF   00     00     00 ---
 EEPROM_B (L) WRITE   00- FF   00     00     00 ---
 EEPROM_B (H) WRITE   00- FF   00     00     00 ---
  INT  RAM  WRITE     00- FF   00     00
  INT  RAM  WRITE    100-1FF   00     00
  INT  RAM  WRITE    200-2FF   00     00
```

1. The display of "2. EEPROM／RAM Editor" appears.

STEP 3

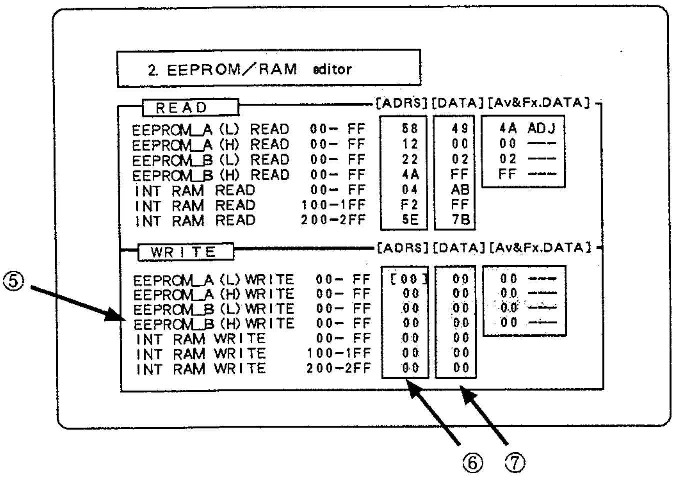


```
 2. EEPROM／RAM  editor

 READ                         [ADR   [DA  A] [Av&  DATA]
 EEPROM_A (L)  READ   00- FF  [58]    46     4A ADJ
 EEPROM_A (H)  READ   00- FF   00     00     00 ---
 EEPROM_B (L)  READ   00- FF   00     00     00 ---
 EEPROM_B (H)  READ   00- FF   00     00     00 ---
  INT  RAM  READ      00- FF   00     00
  INT  RAM  READ     100-1FF   00     00
  INT  RAM  READ     200-2FF   00     00

 WRITE                        [ADRS] [DATA] [Av&Fx.DATA]
 EEPROM_A (L) WRITE   00- FF   00     00     00 ---
 EEPROM_A (H) WRITE   00- FF   00     00     00 ---
 EEPROM_B (L) WRITE   00- FF   00     00     00 ---
 EEPROM_B (H) WRITE   00- FF   00     00     00 ---
  INT  RAM  WRITE     00- FF   00     00
  INT  RAM  WRITE    100-1FF   00     00
  INT  RAM  WRITE    200-2FF   00     00
```

- Reading of EEPROM／RAM Data

1. Move the cursor on the ADRS part (shown by ②) by 「↑」 and 「↓」 keys, and select the desired EEPROM or RAM. (Refer to the display shown by ①.)
2. Input the address of EEPROM or RAM in hexadecimal number by the key board.
3. The data of the selected address appears on the DATA part (shown by ③).
4. The initial value appears on the part shown by ④.

STEP 4 Writing of EEROM/RAM Data



```
2. EEPROM/RAM  editor

READ                              [ADRS] [DATA] [Av&Fx.DATA]
EEPROM_A (L)  READ     00- FF       58     49     4A  ADJ
EEPROM_A (H)  READ     00- FF       12     00     00  ---
EEPROM_B (L)  READ     00- FF       22     02     02  ---
EEPROM_B (H)  READ     00- FF       4A     FF     FF  ---
INT  RAM  READ         00- FF       04     AB
INT  RAM  READ        100-1FF       F2     FF
INT  RAM  READ        200-2FF       5E     7B

WRITE                             [ADRS] [DATA] [Av&Fx.DATA]
EEPROM_A (L) WRITE     00- FF     [00]     00     00  ---
EEPROM_A (H) WRITE     00- FF       00     00     00  ---
EEPROM_B (L) WRITE     00- FF       00     00     00  ---
EEPROM_B (H) WRITE     00- FF       00     00     00  ---
INT  RAM  WRITE        00- FF       00     00
INT  RAM  WRITE       100-1FF       00     00
INT  RAM  WRITE       200-2FF       00     00
```

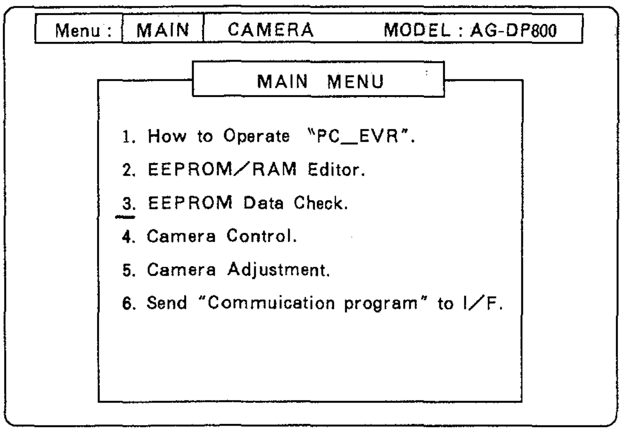
- Writing of EEPROM/RAM Data

1. Move the cursor on the ADRS part (shown by ⑥) by 「↑」 and 「↓」 keys, and select the desired EEPROM or RAM. (Refer to the display shown by ⑤.)
2. Input the address of EEPROM or RAM in hexadecimal number by the key board.
3. Move the cursor to the DATA part (shown by ⑦) by the 「→」 key.
4. Input the data in hexadecimal number.

3-1. How to store the data of EEPROM in the floppy disk

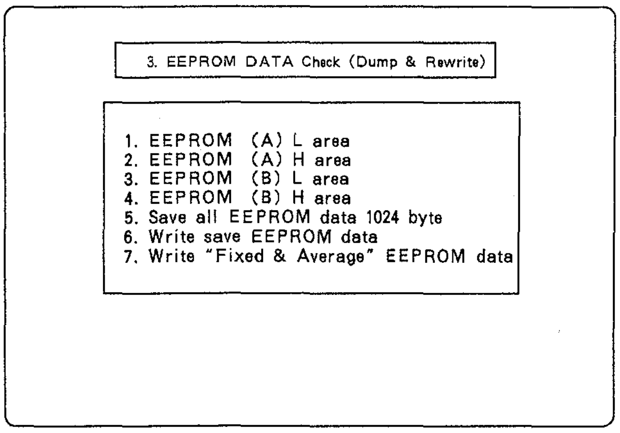
- Store the data of EEPROM in the floppy disk before adjustments.
- If adjustments have been failed, write the data stored in the floppy disk to the EEPROM. (Refer to the section 3-2. "How to write the data of floppy disk to the EEPROM.)

STEP 1


Menu : MAIN CAMERA MODEL : AG-DP800
MAIN MENU
1. How to Operate "PC_EVR".
2. EEPROM/RAM Editor.
3. EEPROM Data Check.
4. Camera Control.
5. Camera Adjustment.
6. Send "Commuication program" to I/F.

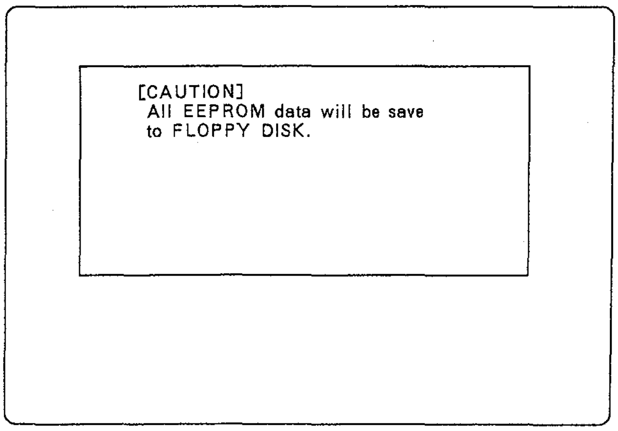
1. Open the Main Menu.
2. Select the "3. EEPROM Data Check". (Move the "_" mark to the "3." position and press the Enter key.)

STEP 2


3. EEPROM DATA Check (Dump & Rewrite)
1. EEPROM (A) L area
2. EEPROM (A) H area
3. EEPROM (B) L area
4. EEPROM (B) H area
5. Save all EEPROM data 1024 byte
6. Write save EEPROM data
7. Write "Fixed & Average" EEPROM data

1. The display "3. EEPROM Data Check" appears.
2. Select "5. Save all EEPROM data 1024 byte".

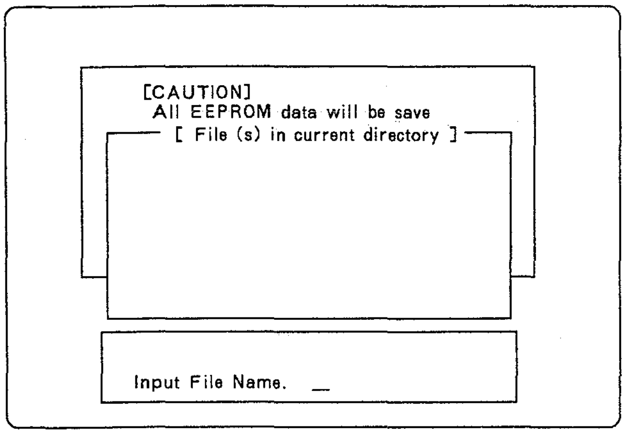
STEP 3



[CAUTION]
All EEPROM data will be save
to FLOPPY DISK.

1. The display shown in the left figure appears.
2. Press the Enter key.

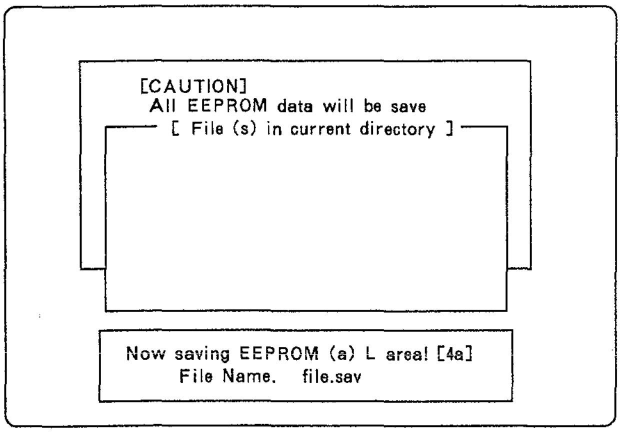
STEP 4



```
[CAUTION]
 All EEPROM data will be save
    [ File (s) in current directory ]

Input File Name.  _
```

1. The display "Input File Name. __ " appears.
2. Input the file name of EEPROM data to be stored by the key board, and press the Enter key.
   (8 letters of any alphabet can be used to the maximum as the file name.)

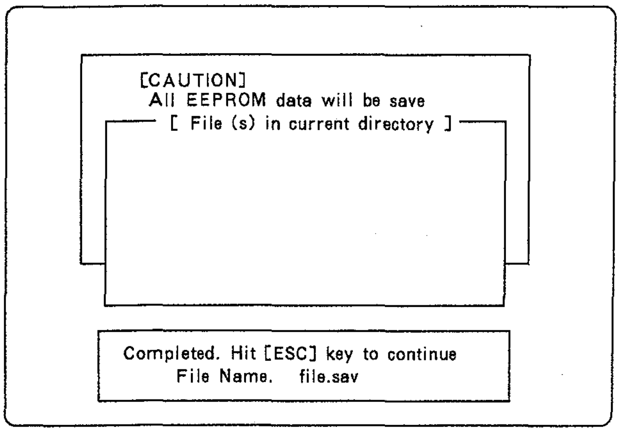
STEP 5



```
[CAUTION]
 All EEPROM data will be save
    [ File (s) in current directory ]

Now saving EEPROM (a) L area! [4a]
      File Name.   file.sav
```

1. The data of EEPROM are recorded in the floppy disk automatically according to the following sequence.
   (It takes 2 or 3 minutes to record.)
   『EEPROM (a) L area』 → 『EEPROM (a) H area』
   → 『EEPROM (b) L area』 → 『EEPROM (b) H area』

STEP 6



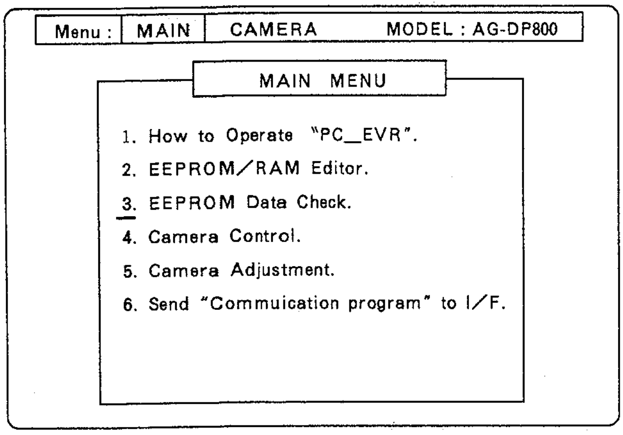
```
[CAUTION]
 All EEPROM data will be save
    [ File (s) in current directory ]

Completed. Hit [ESC] key to continue
      File Name.   file.sav
```

1. If the character "Completed." appears on the screen, recording has been completed.
2. Press the ESC key twice, then the displaty returns to the MAIN MENU.

3-2. How to write the data of floppy disk to the EEPROM

- Write the data stored in the floppy disk to the EEPROM.
- If adjustments have been failed, write the data of floppy disk to the EEPROM.
  (Refer to the section 3-1. "How to store the data of EEPROM in the floppy disk.)

STEP 1



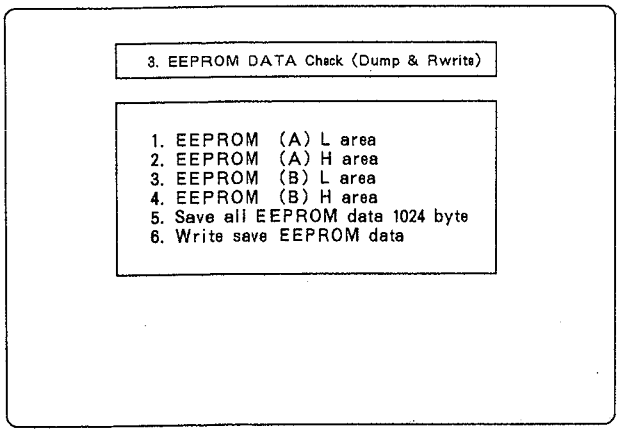
Menu : MAIN CAMERA MODEL : AG-DP800

MAIN MENU

1. How to Operate "PC_EVR".
2. EEPROM/RAM Editor.
3. EEPROM Data Check.
4. Camera Control.
5. Camera Adjustment.
6. Send "Commuication program" to I/F.

1. Open the Main Menu.
2. Select the "3. EEPROM Data Check". (Move the "_" mark to the "3." position and press the Enter key.)

STEP 2

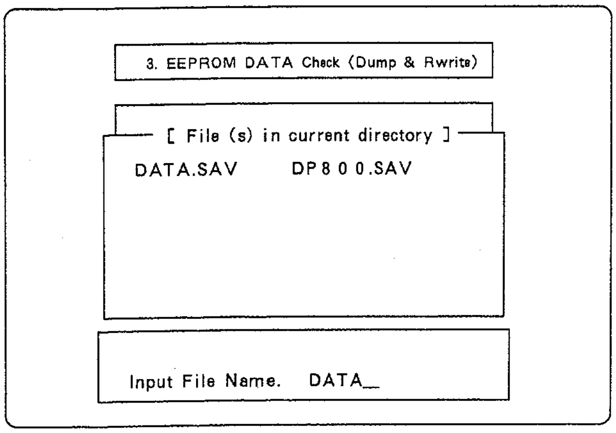


3. EEPROM DATA Check (Dump & Rwrite)

1. EEPROM (A) L area
2. EEPROM (A) H area
3. EEPROM (B) L area
4. EEPROM (B) H area
5. Save all EEPROM data 1024 byte
6. Write save EEPROM data

1. The disply "3. EEPROM Data Check" appears.
2. Select "6. Write save EEPROM data".

STEP 3 Selection of file



3. EEPROM DATA Check (Dump & Rwrite)

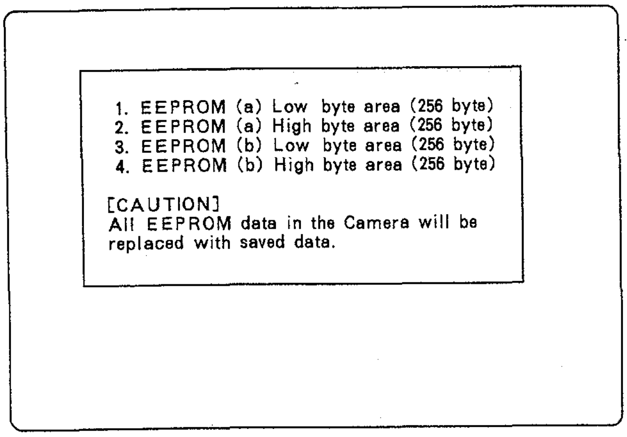
[File (s) in current directory]

DATA.SAV DP8 0 0.SAV

Input File Name. DATA_

1. The displaty "Input File Name. _ " appears.
2. Input the file name of EEPROM data stored in the floppy disk by the key board, and press the Enter key.
   In this example, the file "DATA. SAV" and the file "DP800. SAV" are stored in the floppy disk and the file "DATA" is selected.
   (The files stored in the same directory with the software program are the only ones that can be selected.)

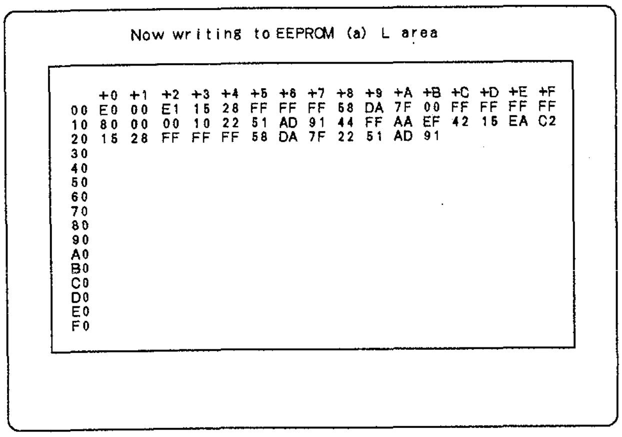
STEP 4 Write the data to the EEPROM



```
1. EEPROM (a) Low  byte area (256 byte)
2. EEPROM (a) High byte area (256 byte)
3. EEPROM (b) Low  byte area (256 byte)
4. EEPROM (b) High byte area (256 byte)

[CAUTION]
All EEPROM data in the Camera will be
replaced with saved data.
```

1. Select "1. EEPROM (a) Low byte area".
2. Press the Enter key.

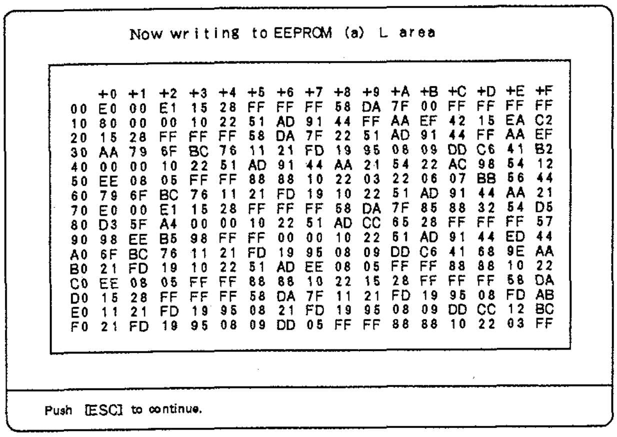
STEP 5 Write the data to the EEPROM



```
Now writing to EEPROM (a) L area

    +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +A +B +C +D +E +F
00  E0 00 E1 15 28 FF FF FF 58 DA 7F 00 FF FF FF FF
10  80 00 00 10 22 51 AD 91 44 FF AA EF 42 15 EA C2
20  15 28 FF FF FF 58 DA 7F 22 51 AD 91
30
40
50
60
70
80
90
A0
B0
C0
D0
E0
F0
```

1. The data recorded in the floppy disk are saved in the EEPROM automatically.
   (It takes about one minute to save.)
   In this example, the data of "EEPROM (a) Low byte area" are saved.

STEP 6



```
Now writing to EEPROM (a) L area

    +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +A +B +C +D +E +F
00  E0 00 E1 15 28 FF FF FF 58 DA 7F 00 FF FF FF FF
10  80 00 00 10 22 51 AD 91 44 FF AA EF 42 15 EA C2
20  15 28 FF FF FF 58 DA 7F 22 51 AD 91 44 FF AA EF
30  AA 79 6F BC 76 11 21 FD 19 95 08 09 DD C6 41 B2
40  00 00 10 22 51 AD 91 44 AA 21 54 22 AC 98 54 12
50  EE 08 05 FF FF 88 88 10 22 03 22 06 07 BB 56 44
60  79 6F BC 76 11 21 FD 19 10 22 51 AD 91 44 AA 21
70  E0 00 E1 15 28 FF FF FF 58 DA 7F 85 88 32 54 D5
80  D3 5F A4 00 00 10 22 51 AD CC 65 28 FF FF FF 57
90  98 EE B5 98 FF FF 00 00 10 22 61 AD 91 44 ED 44
A0  6F BC 76 11 21 FD 19 95 08 09 DD C6 41 68 9E AA
B0  21 FD 19 10 22 51 AD EE 08 05 FF FF 88 88 10 22
C0  EE 08 05 FF FF 88 88 10 22 15 28 FF FF FF 58 DA
D0  15 28 FF FF FF 58 DA 7F 11 21 FD 19 95 08 FD AB
E0  11 21 FD 19 95 08 21 FD 19 95 08 09 DD CC 12 BC
F0  21 FD 19 95 08 09 DD 05 FF FF 88 88 10 22 03 FF

Push [ESC] to continue.
```

1. If the display becomes as shown in the left figure, writing has been completed.
2. Write the data of "2. EEPROM (a) High byte area", "3. EEPROM (b) Low byte area" and "4. EEPROM (b) High byte area" according to the steps 4 and 5 as well as "1. EEPROM (a) Low byte area".

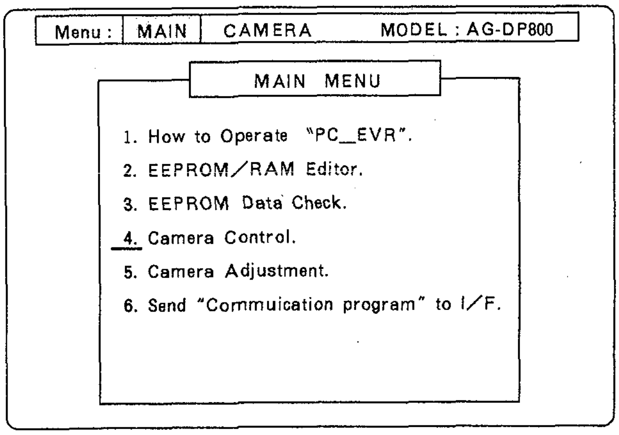
4. How to control the camera

- Control of camera can be operated by the personal computer.
- When adjusting, control of camera can be operated in the condition that the right panel is removed.

※ The following items can be operated.

1. ABB Set.	Execution of ABB
2. AWB Set Ach.	Execution of AWB (Ach)
3. AWB Set Bch.	Execution of AWB (Bch)
4. AWB ch Select	Selection of AWB channel
5. Gain Select	Selection of Gain (0dB→ 9dB→18dB→24dB→Super)
6. AGC ON/ OFF	ON/ OFF of AGC
7. Output Select	Selection of VIDEO Output (Camera/Color Bar)

STEP 1



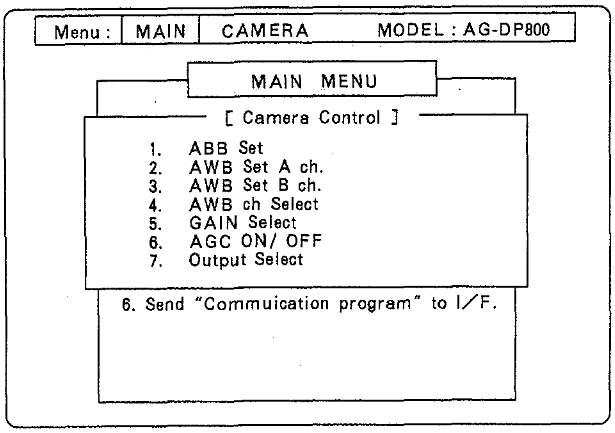
Menu : MAIN CAMERA MODEL : AG-DP800

MAIN MENU

1. How to Operate "PC_EVR".
2. EEPROM/RAM Editor.
3. EEPROM Data Check.
4. Camera Control.
5. Camera Adjustment.
6. Send "Commuication program" to I/F.

1. Open the Main Menu.
2. Select "4. Camera Control". (Move the "_" mark to the "4." position and press the Enter key.)

STEP 2



Menu : MAIN CAMERA MODEL : AG-DP800

MAIN MENU

[Camera Control]

1. ABB Set
2. AWB Set A ch.
3. AWB Set B ch.
4. AWB ch Select
5. GAIN Select
6. AGC ON/ OFF
7. Output Select

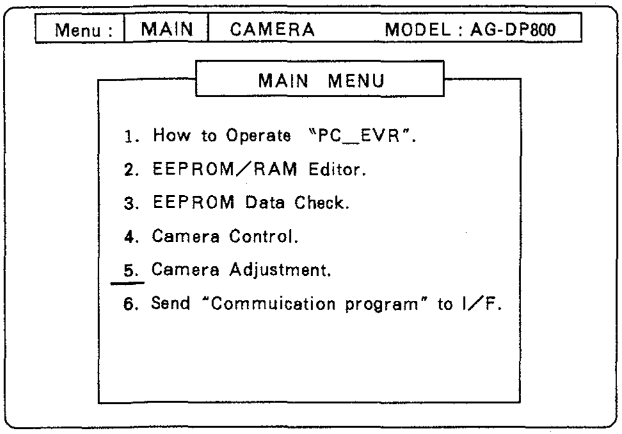
6. Send "Commuication program" to I/F.

1. The display "4. Camera Control" appears.
2. Select the item to be operated and press the Enter key, then the selected item is executed.

5. Electrical Adjustment of the Camera Part (Digital Part)

- Electrical Adjustment Procedures of the Camera Part (Digital Part)

STEP 1



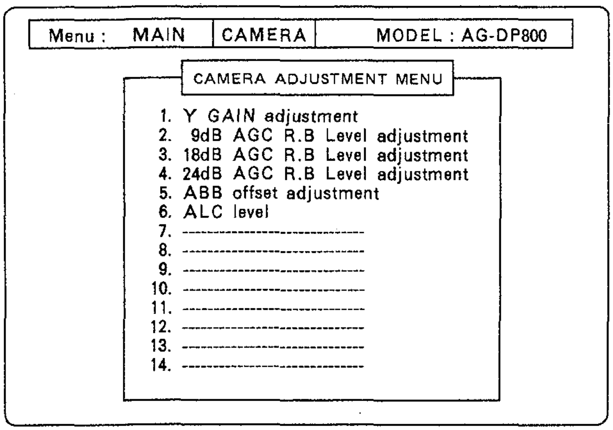
Menu : | MAIN | CAMERA MODEL : AG-DP800

MAIN MENU

1. How to Operate "PC_EVR".
2. EEPROM/RAM Editor.
3. EEPROM Data Check.
4. Camera Control.
5. Camera Adjustment.
6. Send "Commuication program" to I/F.

1. Open the Main Menu.
2. Select "5. Camera Adjustment". (Move the "_" mark to the "5." position and press the Enter key.)

STEP 2



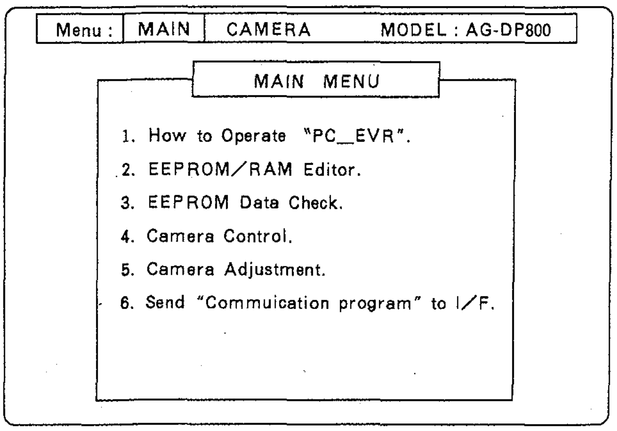
Menu : MAIN | CAMERA | MODEL : AG-DP800

CAMERA ADJUSTMENT MENU

1. Y GAIN adjustment
2. 9dB AGC R.B Level adjustment
3. 18dB AGC R.B Level adjustment
4. 24dB AGC R.B Level adjustment
5. ABB offset adjustment
6. ALC level
7. -----------------------------
8. -----------------------------
9. -----------------------------
10. -----------------------------
11. -----------------------------
12. -----------------------------
13. -----------------------------
14. -----------------------------

1. The display "CAMERA ADJUSTMENT MENU" appears.
2. Select the item to be adjusted and press the Enter key.
3. Concerning each adjustment, refer to its explanation.

STEP 3



Menu : | MAIN | CAMERA MODEL : AG-DP800

MAIN MENU

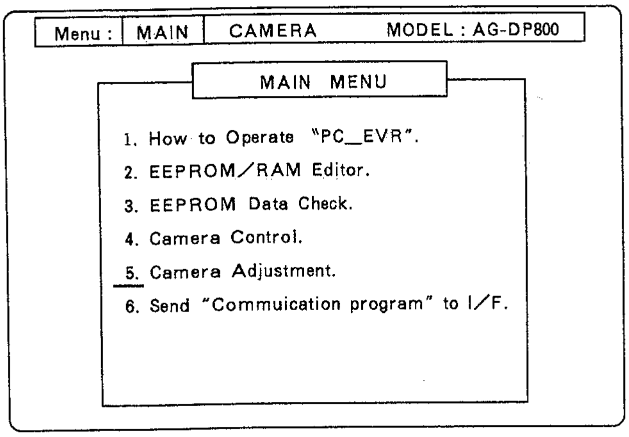
1. How to Operate "PC_EVR".
2. EEPROM/RAM Editor.
3. EEPROM Data Check.
4. Camera Control.
5. Camera Adjustment.
6. Send "Commuication program" to I/F.

1. When returning to the Main Menu, press the [←] key at the scene of STEP 2.

5-1. Y Gain Adjustment

- Y Gain Adjustment of the Camera Section
  Connect the oscilloscope to TP3711.

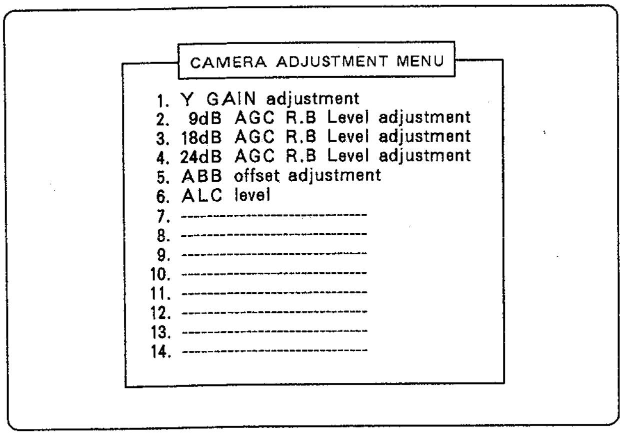
STEP 1



```
Menu : | MAIN | CAMERA          MODEL : AG-DP800

                 MAIN  MENU

    1. How to Operate "PC_EVR".
    2. EEPROM/RAM Editor.
    3. EEPROM Data Check.
    4. Camera Control.
    5. Camera Adjustment.
    6. Send "Commuication program" to I/F.
```

1. Open the Main Menu.
2. Select "5. Camera Adjustment". (Move the "_" mark to the "5." position and press the Enter key.)

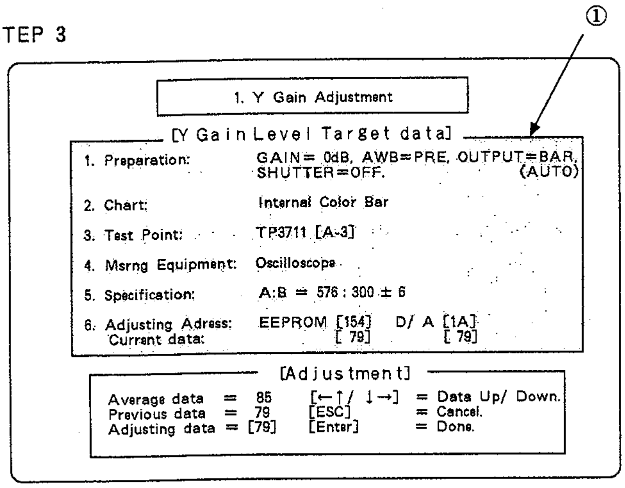
STEP 2



```
        CAMERA ADJUSTMENT MENU

  1. Y GAIN adjustment
  2.  9dB AGC R.B Level adjustment
  3. 18dB AGC R.B Level adjustment
  4. 24dB AGC R.B Level adjustment
  5. ABB offset adjustment
  6. ALC level
  7. ----------------------------
  8. ----------------------------
  9. ----------------------------
 10. ----------------------------
 11. ----------------------------
 12. ----------------------------
 13. ----------------------------
 14. ----------------------------
```

1. The display "CAMERA ADJUSTMENT MENU" appears.
2. Select "1. Y GAIN adjustment".

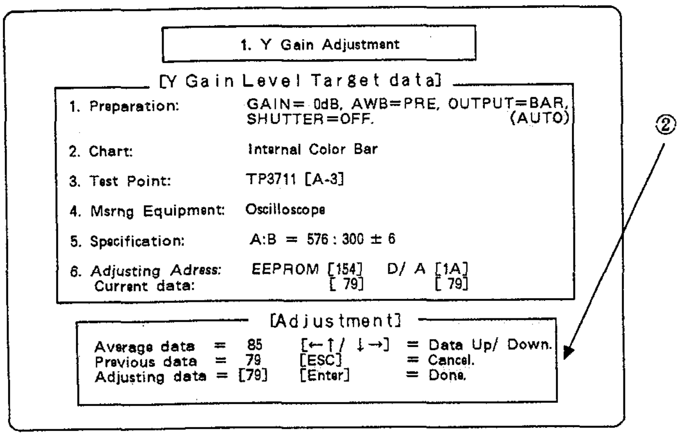
STEP 3



```
              1. Y Gain Adjustment

 ______ [Y Gain Level Target data] ______________
 1. Preparation:       GAIN= 0dB, AWB=PRE, OUTPUT=BAR,
                       SHUTTER=OFF.                 (AUTO)
 2. Chart:             Internal Color Bar
 3. Test Point:        TP3711 [A-3]
 4. Msrng Equipment:   Oscilloscope
 5. Specification:     A:B = 576 : 300 ± 6
 6. Adjusting Adress:  EEPROM [154]   D/ A [1A]
    Current data:             [ 79]        [ 79]

 ___________ [Adjustment] ___________
  Average data   =  85    [←↑/ ↓→]   = Data Up/ Down.
  Previous data  =  79    [ESC]      = Cancel.
  Adjusting data = [79]   [Enter]    = Done.
```

1. The scene shown in the left figure appears.
2. The shaded portion (shown by ①) shows the following items.
   1. Preparation ···· Each item is set up automatically as shown below.
      GAIN=0dB, AWB=PRE,
      OUTPUT=BAR (Color Bar), SHUTTER=OFF
   2. Chart ···· the chart to be used
      Internal Color Bar (It is set up automatically at "1. Preparation".)
   3. Test Point ···· TP3711
   4. Measuring Equipment ···· Oscilloscope
   5. Specification ···· A : B = 576 : 300 ± 6 (NTSC)
      A : B = 700 : 300 ± 6 (PAL)
   6. Adjustment Address and Current data ···· Address and Current data of EEPROM and D/A converter to be adjusted

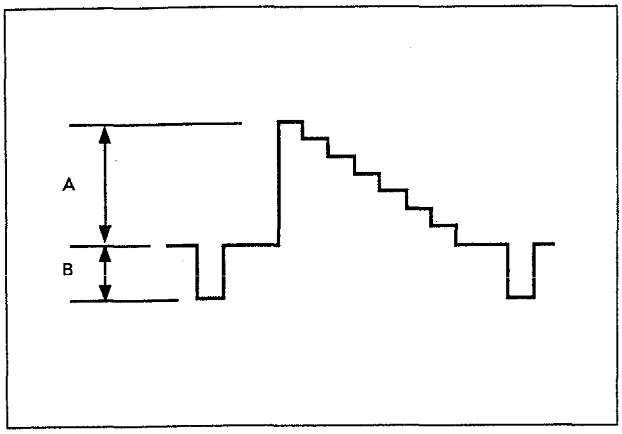
STEP 4


```
1. Y Gain Adjustment

[Y Gain Level Target data]
1. Preparation:          GAIN= 0dB, AWB=PRE, OUTPUT=BAR,
                         SHUTTER=OFF.                (AUTO)
2. Chart:                Internal Color Bar
3. Test Point:           TP3711 [A-3]
4. Msrng Equipment:      Oscilloscope
5. Specification:        A:B = 576 : 300 ± 6
6. Adjusting Adress:     EEPROM [154]    D/ A [1A]
   Current data:                [ 79]         [ 79]

[Adjustment]
Average data   =  85     [←↑/ ↓→]  = Data Up/ Down.
Previous data  =  79     [ESC]     = Cancel.
Adjusting data = [79]    [Enter]   = Done.
```

1. Perform adjustments at the shaded portion (shown by ②).
   1. Average data ···· It shows the average data of adjusting value.
   2. Previous data ···· It shows the value before adjustment.
   3. Adjusting data ···· It shows the current adjusting value.

   ※ All value are shown in hexadecimal number and from "00" to "FF".

STEP 5 (Waveform)



1. Adjust "Y GAIN" by the [←] , [↑] , [↓] and [→] keys so that A : B = 576 : 300±6 (NTSC) or A : B = 700 : 300±6 (PAL). (Refer to the left figure.)

   Each key operates as shown below.

   [↑] ···· adjusting value increases by "1"
   [↓] ···· *adjusting value decreases by "1"*
   [→] ···· adjusting value increases by "16"
   [←] ···· adjusting value decreases by "16"

2. After adjustment, press the Enter key.

   By performing this operation, adjusting value is written in the Adjustment Address of EEPROM and adjustment has been ended.

   [Enter] ···· *writing adjusting value and ending adjustment*

3. When quitting adjustment, press the ESC key.

   By performing this operation, adjusting value isn't written in the Adjustment Address of EEPROM and adjusting value returns to the value before adjustment.

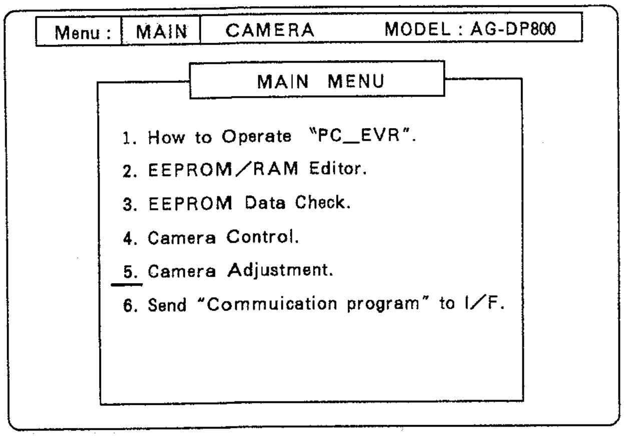
   [ESC] ···· ending adjustment without writing adjusting value

5-2. 9dB AGC R.B Level Adjustment

- 9dB AGC R.B Level Adjustment of the Camera Section

Connect the vectorscope to the CAMERA OUT terminal of AG-DP800.

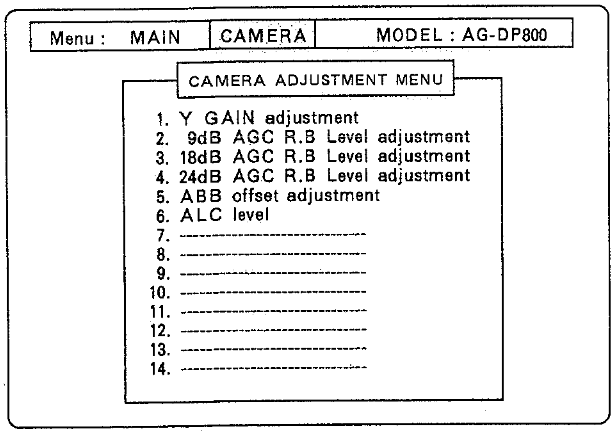
STEP 1



```
Menu : | MAIN | CAMERA          MODEL : AG-DP800

                MAIN  MENU

 1. How to Operate  "PC__EVR".
 2. EEPROM/RAM Editor.
 3. EEPROM Data Check.
 4. Camera Control.
 5. Camera Adjustment.
 6. Send "Commuication program" to I/F.
```

1. Open the Main Menu.
2. Select "5. Camera Adjustment". (Move the "_" mark to the "5." position and press the Enter key.)

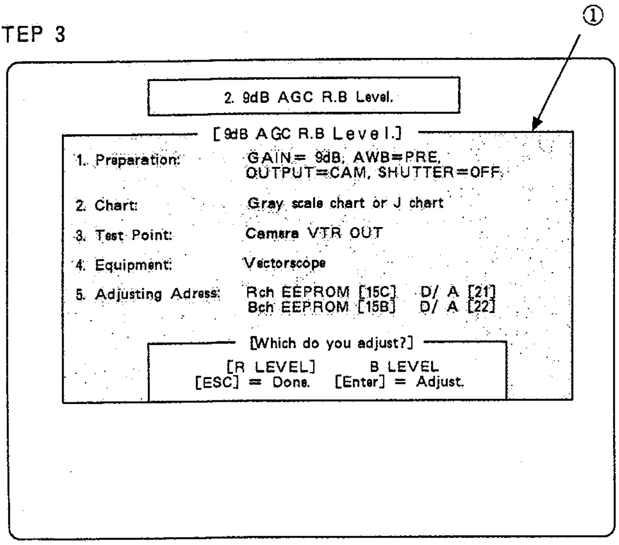
STEP 2



```
Menu :   MAIN   | CAMERA |        MODEL : AG-DP800

            CAMERA ADJUSTMENT MENU

  1. Y GAIN adjustment
  2.  9dB AGC R.B Level adjustment
  3. 18dB AGC R.B Level adjustment
  4. 24dB AGC R.B Level adjustment
  5. ABB offset adjustment
  6. ALC level
  7. ----------------------------
  8. ----------------------------
  9. ----------------------------
 10. ----------------------------
 11. ----------------------------
 12. ----------------------------
 13. ----------------------------
 14. ----------------------------
```

1. The display "CAMERA ADJUSTMENT MENU" appears.
2. Select "2. 9dB AGC R.B Level adjustment".

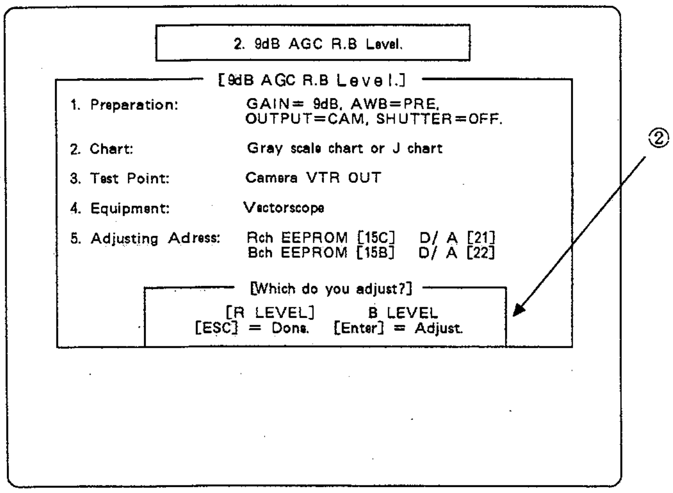
STEP 3



```
              2. 9dB AGC R.B Level.

 ------------ [9dB AGC R.B Level.] ------------
 1. Preparation:          GAIN= 9dB, AWB=PRE,
                          OUTPUT=CAM, SHUTTER=OFF.
 2. Chart:                Gray scale chart or J chart
 3. Test Point:           Camera VTR OUT
 4. Equipment:            Vectorscope
 5. Adjusting Adress:     Rch EEPROM [15C]   D/ A [21]
                          Bch EEPROM [15B]   D/ A [22]

            ----- [Which do you adjust?] -----
              [R LEVEL]         B LEVEL
            [ESC] = Done.   [Enter] = Adjust.
```

1. The scene shown in the left figure appears.
2. The shaded portion (shown by ①) shows the following items.
   1. Preparation ···· Each item is set up automatically as shown below.
      GAIN=9dB, AWB=PRE,
      OUTPUT=CAM, SHUTTER=OFF
   2. Chart ···· the chart to be used
      Gray scale chart or J chart
   3. Test Point ···· CAMERA OUT
   4. Equipment ···· Vectorscope
   5. Adjustment Address ···· Address of EEPROM and D/A converter to be adjusted

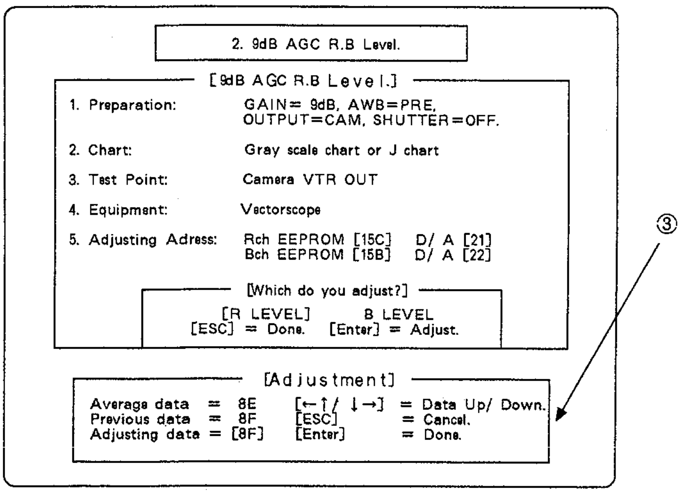
STEP 4



```
2. 9dB AGC R.B Level.

[9dB AGC R.B Level.]
1. Preparation:        GAIN= 9dB, AWB=PRE,
                       OUTPUT=CAM, SHUTTER=OFF.
2. Chart:              Gray scale chart or J chart
3. Test Point:         Camera VTR OUT
4. Equipment:          Vectorscope
5. Adjusting Adress:   Rch EEPROM [15C]   D/ A [21]
                       Bch EEPROM [15B]   D/ A [22]

            [Which do you adjust?]
        [R LEVEL]          B LEVEL
     [ESC] = Done.    [Enter] = Adjust.
```

1. Select the R channel by the [←] and [→] keys at the shaded portion (shown by ②).
2. Press the Enter key.

STEP 5



```
2. 9dB AGC R.B Level.

[9dB AGC R.B Level.]
1. Preparation:        GAIN= 9dB, AWB=PRE,
                       OUTPUT=CAM, SHUTTER=OFF.
2. Chart:              Gray scale chart or J chart
3. Test Point:         Camera VTR OUT
4. Equipment:          Vectorscope
5. Adjusting Adress:   Rch EEPROM [15C]   D/ A [21]
                       Bch EEPROM [15B]   D/ A [22]

            [Which do you adjust?]
        [R LEVEL]          B LEVEL
     [ESC] = Done.    [Enter] = Adjust.

[Adjustment]
Average data   =  8E    [←↑/ ↓→] = Data Up/ Down.
Previous data  =  8F    [ESC]    = Cancel.
Adjusting data = [8F]   [Enter]  = Done.
```

1. The scene shown in the left figure appears.
2. Perform adjustments at the shaded portion (shown by ③).
   1. Average data ···· It shows the average data of adjusting value.
   2. Previous data ···· It shows the value before adjustment.
   3. Adjusting data ···· It shows the current adjusting value.

   ※ All value are shown in hexadecimal number and from "00" to "FF".

STEP 6

1. Adjust the level of the R channel by the [←], [↑], [↓] and [→] keys so that the subcarrier noise is centered on the vectorscope as shown in the figure on the next page.

   Each key operates as shown below.

   [↑] ···· adjusting value increases by "1"
   [↓] ···· adjusting value decreases by "1"
   [→] ···· adjusting value increases by "16"
   [←] ···· adjusting value decreases by "16"

2. After adjustment, press the Enter key.

   By performing this operation, adjusting value is written in the Adjustment Address of EEPROM and the display returns to the scene at STEP 4.

   [Enter] ···· writing adjusting value and the display returns to the scene at STEP 4.

3. When quitting adjustment, press the ESC key.

   By performing this operation, adjusting value isn't written in the Adjustment Address of EEPROM and adjusting value returns to the value before adjustment.

   And the display returns to the scene at STEP 4.

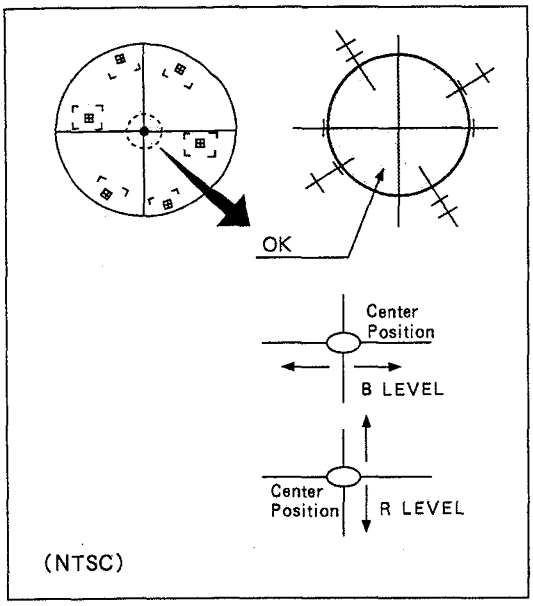
   [ESC] ···· quitting adjustment without writing adjusting value

STEP 7

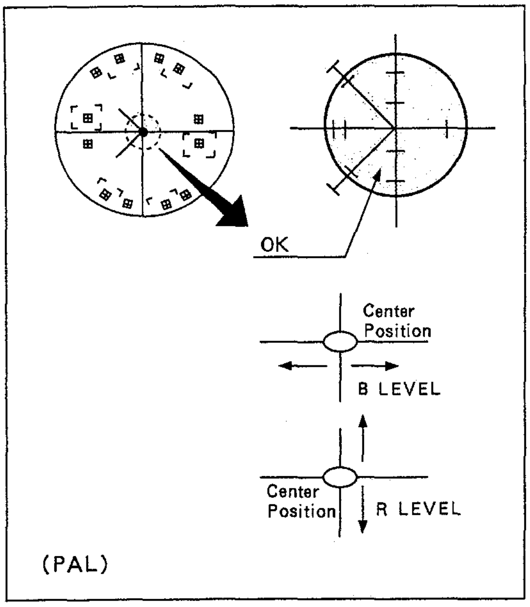
1. Select the B channel by the [←] and [→] keys at the scene of STEP 4.
2. Press the Enter key.
3. Adjust the level of the B channel by the [←] , [↑] , [↓] and [→] keys so that the subcarrier noise is centered on the vectorscope in the same way as the the R channel.

Confirm that the subcarrier noise is centered on the vectorscope as shown in the left figure.

If not, repeat the steps from 4 to 7.


OK
Center Position
B LEVEL
Center Position
R LEVEL

(NTSC)


OK
Center Position
B LEVEL
Center Position
R LEVEL

(PAL)

STEP 8

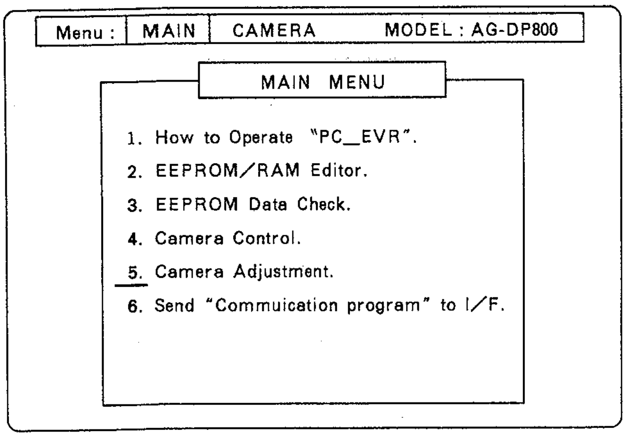
1. After performing adjustments at the scene of STEP 5, press the Enter key. Then the display returns to the scene of STEP 4.
2. Press the ESC key at the scene of STEP 4. Then the display returns to "CAMERA ADJUSTMENT MENU" at STEP 2.

5-3. 18dB AGC R.B Level Adjustment

- 18dB AGC R.B Level Adjustment of the Camera Section

Connect the vectorscope to the CAMERA OUT terminal of AG-DP800.

STEP 1



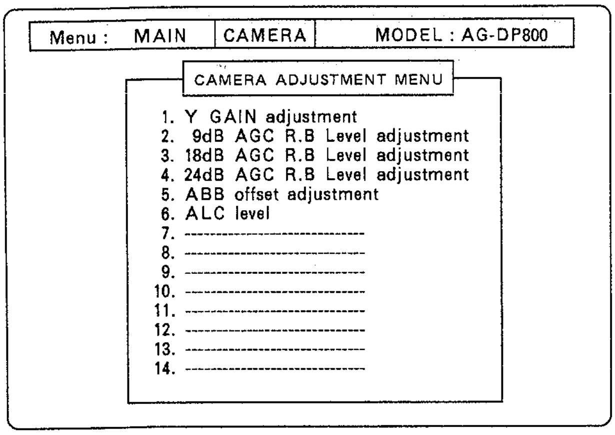
Menu : MAIN CAMERA MODEL : AG-DP800

MAIN MENU

1. How to Operate "PC_EVR".
2. EEPROM/RAM Editor.
3. EEPROM Data Check.
4. Camera Control.
5. Camera Adjustment.
6. Send "Commuication program" to I/F.

1. Open the Main Menu.
2. Select "5. Camera Adjustment". (Move the "_" mark to the "5." position and press the Enter key.)

STEP 2



Menu : MAIN CAMERA MODEL : AG-DP800

CAMERA ADJUSTMENT MENU

1. Y GAIN adjustment
2. 9dB AGC R.B Level adjustment
3. 18dB AGC R.B Level adjustment
4. 24dB AGC R.B Level adjustment
5. ABB offset adjustment
6. ALC level
7. ----------------------------
8. ----------------------------
9. ----------------------------
10. ----------------------------
11. ----------------------------
12. ----------------------------
13. ----------------------------
14. ----------------------------

1. The display "CAMERA ADJUSTMENT MENU" appears.
2. Select "3. 18dB AGC R.B Level adjustment".

STEP 3

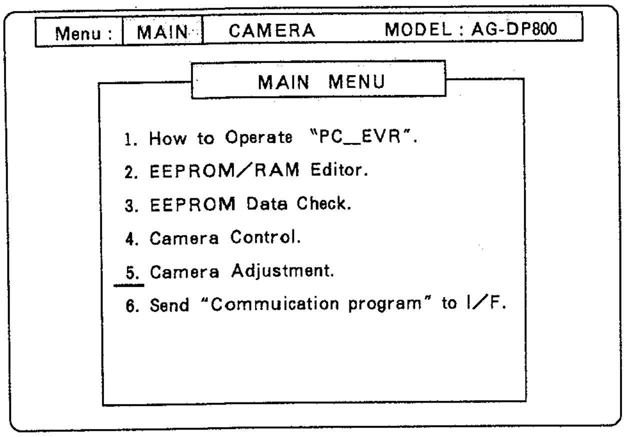
1. Adjust the level of the R channel and the level of the B channel in the same way as "2. 9dB AGC R.B Level adjustment".

5-4. 24dB AGC R.B Level Adjustment

- 24dB AGC R.B Level Adjustment of the Camera Section

Connect the vectorscope to the CAMERA OUT terminal of AG-DP800.

STEP 1



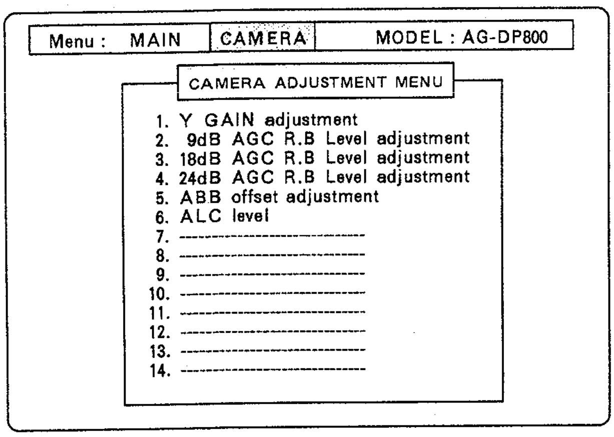
Menu : MAIN CAMERA MODEL : AG-DP800

MAIN MENU

1. How to Operate "PC_EVR".
2. EEPROM/RAM Editor.
3. EEPROM Data Check.
4. Camera Control.
5. Camera Adjustment.
6. Send "Commuication program" to I/F.

1. Open the Main Menu.
2. Select "5. Camera Adjustment". (Move the "_" mark to the "5." position and press the Enter key.)

STEP 2



Menu : MAIN CAMERA MODEL : AG-DP800

CAMERA ADJUSTMENT MENU

1. Y GAIN adjustment
2. 9dB AGC R.B Level adjustment
3. 18dB AGC R.B Level adjustment
4. 24dB AGC R.B Level adjustment
5. ABB offset adjustment
6. ALC level
7. ---------------------------
8. ---------------------------
9. ---------------------------
10. ---------------------------
11. ---------------------------
12. ---------------------------
13. ---------------------------
14. ---------------------------

1. The display "CAMERA ADJUSTMENT MENU" appears.
2. Select "4. 24dB AGC R.B Level adjustment".

STEP 3

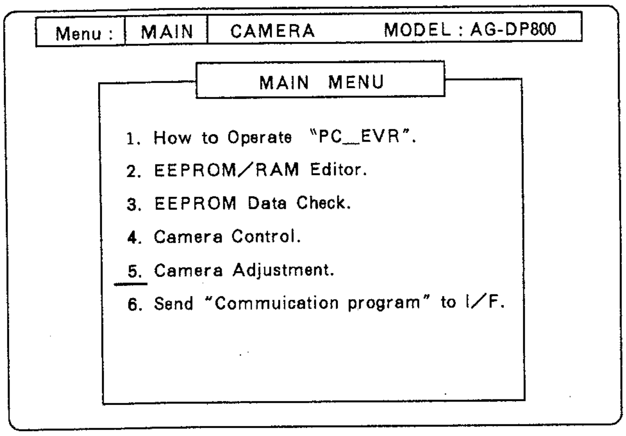
1. Adjust the level of the R channel and the level of the B channel in the same way as "2. 9dB AGC R.B Level adjustment".

5-5. ABB Offset Adjustment

- ABB Offset Adjustment of the Camera Section

Connect the vectorscope to the CAMERA OUT terminal of AG-DP800.

STEP 1



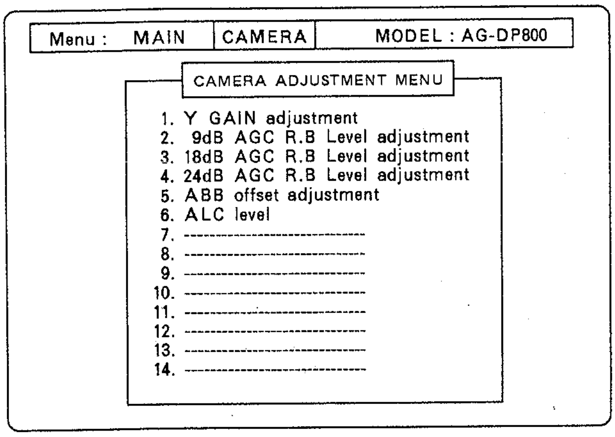
Menu : | MAIN | CAMERA | MODEL : AG-DP800

MAIN MENU

1. How to Operate "PC_EVR".
2. EEPROM/RAM Editor.
3. EEPROM Data Check.
4. Camera Control.
5. Camera Adjustment.
6. Send "Commuication program" to I/F.

1. Open the Main Menu.
2. Select "5. Camera Adjustment". (Move the "_" mark to the "5." position and press the Enter key.)

STEP 2



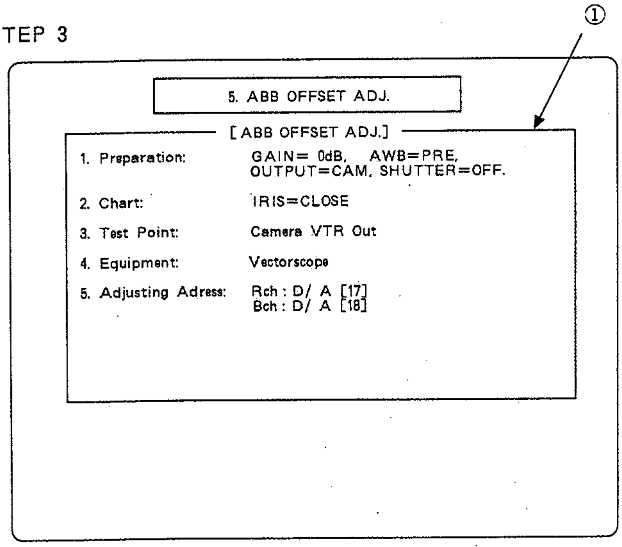
Menu : MAIN | CAMERA | MODEL : AG-DP800

CAMERA ADJUSTMENT MENU

1. Y GAIN adjustment
2. 9dB AGC R.B Level adjustment
3. 18dB AGC R.B Level adjustment
4. 24dB AGC R.B Level adjustment
5. ABB offset adjustment
6. ALC level
7. ------------------------------
8. ------------------------------
9. ------------------------------
10. ------------------------------
11. ------------------------------
12. ------------------------------
13. ------------------------------
14. ------------------------------

1. The display "CAMERA ADJUSTMENT MENU" appears.
2. Select "5. ABB offset adjustment".

STEP 3



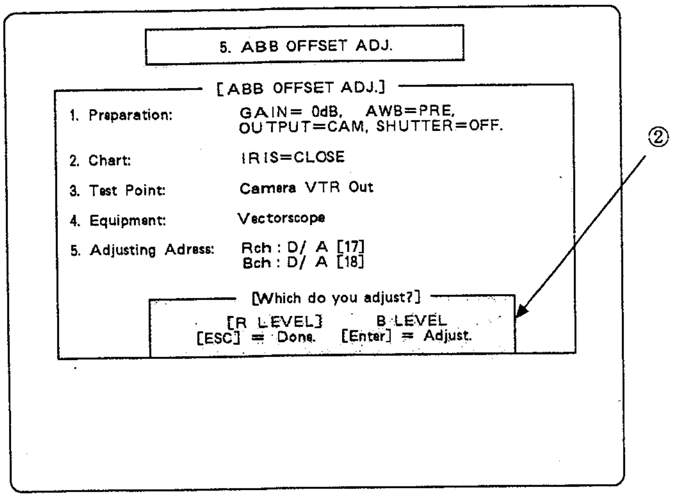
5. ABB OFFSET ADJ.

[ABB OFFSET ADJ.]

1. Preparation: GAIN= 0dB, AWB=PRE, OUTPUT=CAM, SHUTTER=OFF.
2. Chart: IRIS=CLOSE
3. Test Point: Camera VTR Out
4. Equipment: Vectorscope
5. Adjusting Adress: Rch : D/ A [17] Bch : D/ A [18]

1. The scene shown in the left figure appears and the "ABB" is performed.
2. The shaded portion (shown by ①) shows the following items.
    1. Preparation ···· Each item is set up automatically as shown below.
       GAIN=0dB, AWB=PRE,
       OUTPUT=CAM, SHUTTER=OFF
    2. Chart ···· the chart to be used
       IRIS=CLOSE
    3. Test Point ···· CAMERA OUT
    4. Equipment ···· Vectorscope
    5. Adjustment Address ···· Address of D/A converter to be adjusted

STEP 4


5. ABB OFFSET ADJ.

[ABB OFFSET ADJ.]

1. Preparation: GAIN= 0dB, AWB=PRE, OUTPUT=CAM, SHUTTER=OFF.
2. Chart: IRIS=CLOSE
3. Test Point: Camera VTR Out
4. Equipment: Vectorscope
5. Adjusting Adress: Rch : D/ A [17] Bch : D/ A [18]

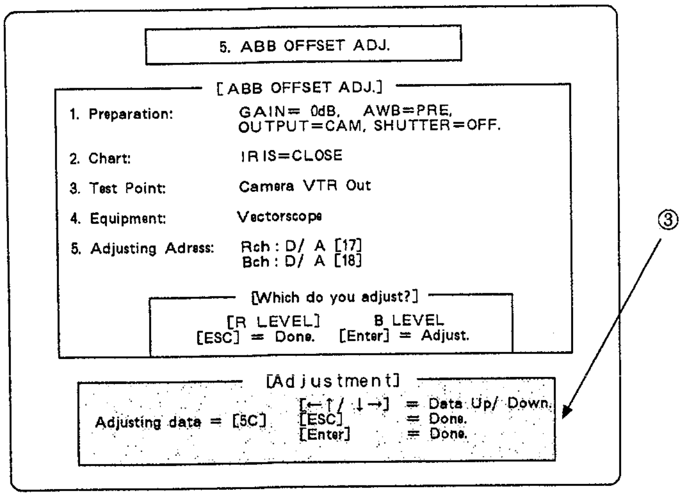
[Which do you adjust?]

[R LEVEL] B LEVEL

[ESC] = Done. [Enter] = Adjust.

1. The scene shown in the left figure appears after a few minutes.
2. Close the lens iris.
3. Select the R channel by the [←] and [→] keys at the shaded portion (shown by ②).
4. Press the Enter key.

STEP 5


5. ABB OFFSET ADJ.

[ABB OFFSET ADJ.]

1. Preparation: GAIN= 0dB, AWB=PRE, OUTPUT=CAM, SHUTTER=OFF.
2. Chart: IRIS=CLOSE
3. Test Point: Camera VTR Out
4. Equipment: Vectorscope
5. Adjusting Adress: Rch : D/ A [17] Bch : D/ A [18]

[Which do you adjust?]

[R LEVEL] B LEVEL

[ESC] = Done. [Enter] = Adjust.

[Adjustment]

Adjusting data = [5C]

[←↑/ ↓→] = Data Up/ Down.

[ESC] = Done.

[Enter] = Done.

1. The scene shown in the left figure appears.
2. Perform adjustments at the shaded portion (shown by ③).
    1. Adjusting data ···· It shows the current adjusting value.

    ※ All value are shown in hexadecimal number and from "00" to "FF".

STEP 6

1. Adjust the level of the R channel by the [←] , [↑] , [↓] and [→] keys so that the subcarrier noise is centered on the vectorscope as shown in the figure on the next page.

    Each key operates as shown below.

    [↑] ···· adjusting value increases by "1"

    [↓] ···· adjusting value decreases by "1"

    [→] ···· adjusting value increases by "16"

    [←] ···· adjusting value decreases by "16"

2. After adjustment, press the Enter key.

    By performing this operation, adjusting value is written in the Adjustment Address of D/A converter and the display returns to the scene at STEP 4.

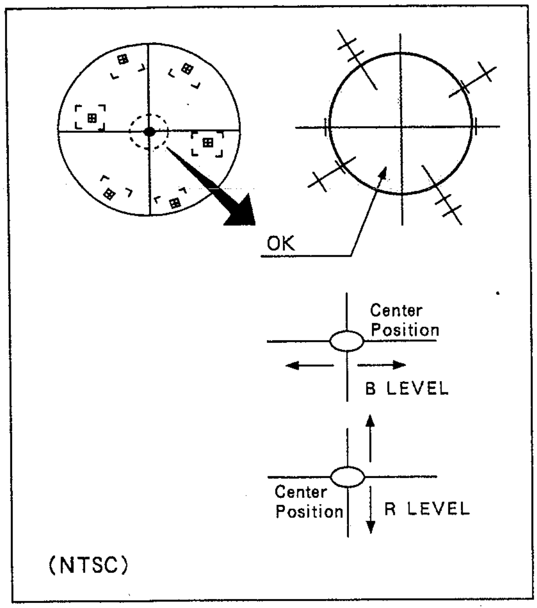
    [Enter] ···· writing adjusting value and the display returns to the scene at STEP 4.

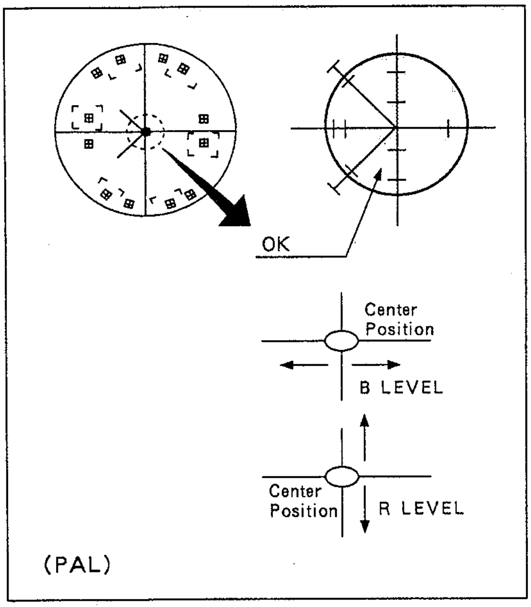
3. When quitting adjustment, press the ESC key.

    By performing this operation, adjusting value isn't written in the Adjustment Address of D/A converter and adjusting value returns to the value before adjustment. And the display returns to the scene at STEP 4.

    [ESC] ···· quitting adjustment without writing adjusting value

STEP 7

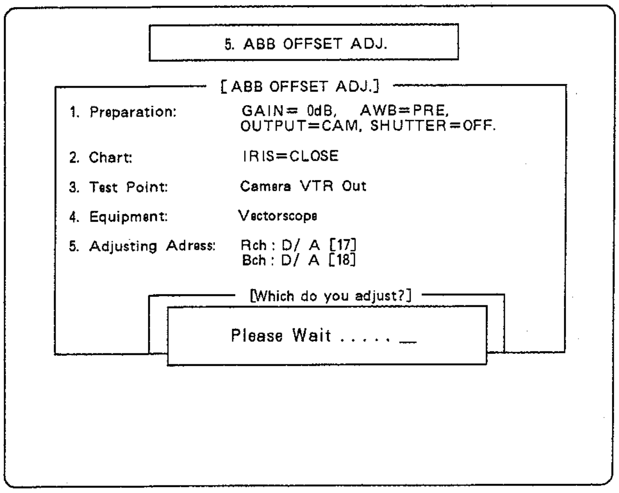




1. Select the B channel by the [←] and [→] keys at the scene of STEP 4.
2. Press the Enter key.
3. Adjust the level of the B channel by the [←] , [↑] , [↓] and [→] keys so that the subcarrier noise is centered on the vectorscope as well as the the R channel.

Confirm that the subcarrier noise is centered on the vectorscope as shown in the left figure.
If not, repeat the steps from 4 to 7.

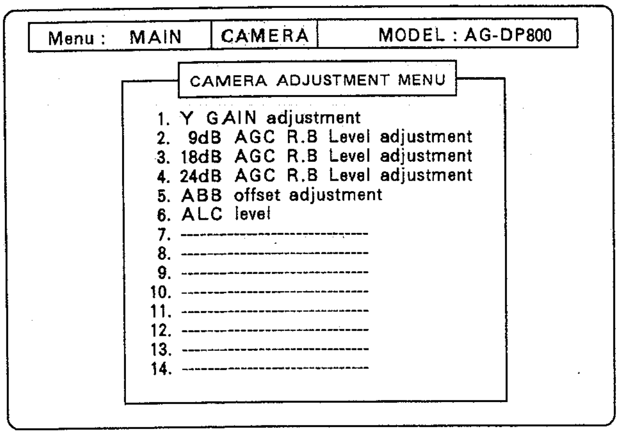
STEP 8



```
                 5. ABB OFFSET ADJ.

              [ABB OFFSET ADJ.]
1. Preparation:        GAIN= 0dB,   AWB=PRE,
                       OUTPUT=CAM, SHUTTER=OFF.
2. Chart:              IRIS=CLOSE
3. Test Point:         Camera VTR Out
4. Equipment:          Vectorscope
5. Adjusting Adress:   Rch : D/ A [17]
                       Bch : D/ A [18]
                   [Which do you adjust?]
                  Please Wait ..... _
```

1. After performing adjustments at the scene of STEP 5, press the Enter key. Then the display returns to the scene of STEP 4.
2. Press the ESC key at the scene of STEP 4. Then the display shown in the left figure appears. (Calculating is performing to get the value to be written in the Adjustment Address of EEPROM from the data.)
3. (a) When the value is within the supposed range, the stage goes to STEP 9.
   (b) When the value is out of the supposed range, the stage goes to STEP 10.

STEP 9



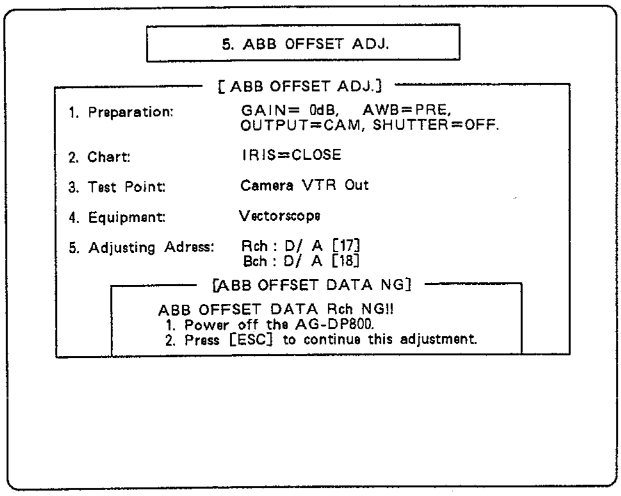
Menu : MAIN | CAMERA | MODEL : AG-DP800

CAMERA ADJUSTMENT MENU

1. Y GAIN adjustment
2. 9dB AGC R.B Level adjustment
3. 18dB AGC R.B Level adjustment
4. 24dB AGC R.B Level adjustment
5. ABB offset adjustment
6. ALC level
7. -----------------------------
8. -----------------------------
9. -----------------------------
10. -----------------------------
11. -----------------------------
12. -----------------------------
13. -----------------------------
14. -----------------------------

1. The adjusting value is written in the Adjustment Address of EEPROM and the scene returns to "CAMERA ADJUSTMENT MENU". ("ABB Offset Adjustment" has been completed.)

STEP 10



5. ABB OFFSET ADJ.

[ABB OFFSET ADJ.]

1. Preparation: GAIN= 0dB, AWB=PRE, OUTPUT=CAM, SHUTTER=OFF.
2. Chart: IRIS=CLOSE
3. Test Point: Camera VTR Out
4. Equipment: Vectorscope
5. Adjusting Adress: Rch : D/ A [17]
   Bch : D/ A [18]

[ABB OFFSET DATA NG]

ABB OFFSET DATA Rch NG!!
1. Power off the AG-DP800.
2. Press [ESC] to continue this adjustment.

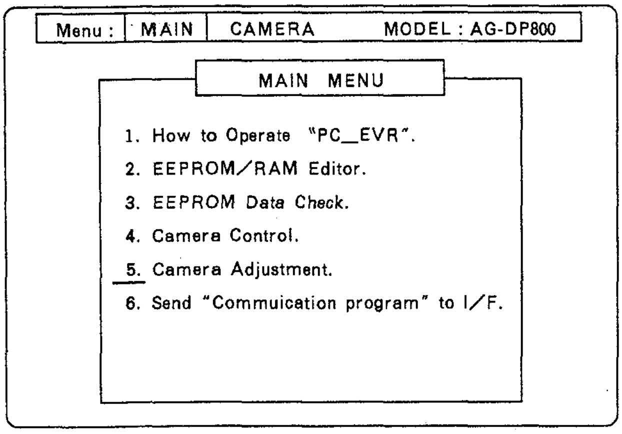
1. "ABB Offset Adjustment" has been failed and the scene shown in the left figure" appears. Perform "ABB Offset Adjustment" again as follows.
   a. Power off the AG-DP800.
   b. Power on the AG-DP800.
   c. Press the ESC key. Then the stage returns to STEP 3.
   d. Repeat the steps from 3 to 8.

Repeat the steps from 3 to 9 (10) until "ABB Offset Adjustment" has been completed."

5-6. ALC Level Adjustment

- ALC (Auto Lens iris Control) Level can be adjusted by PC-EVR.

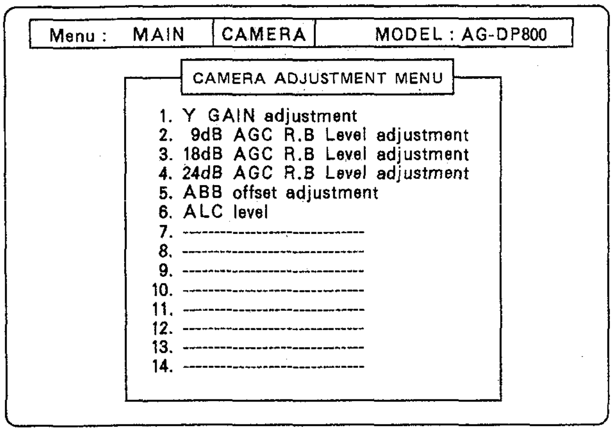
STEP 1



```
Menu : | MAIN | CAMERA        MODEL : AG-DP800

                 MAIN  MENU

   1. How to Operate  "PC_EVR".
   2. EEPROM/RAM Editor.
   3. EEPROM Data Check.
   4. Camera Control.
   5. Camera Adjustment.
   6. Send "Commuication program" to I/F.
```

1. Open the Main Menu.
2. Select "5. Camera Adjustment". (Move the "_" mark to the "5." position and press the Enter key.)

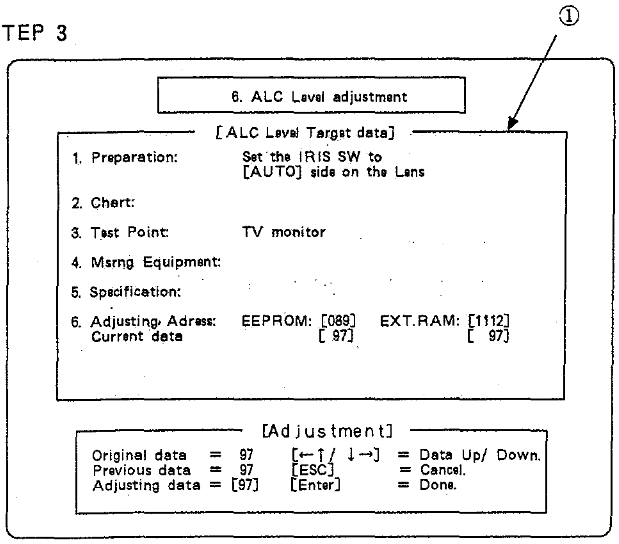
STEP 2



```
Menu :  MAIN  | CAMERA |        MODEL : AG-DP800

          CAMERA ADJUSTMENT MENU

      1. Y GAIN adjustment
      2.  9dB AGC R.B Level adjustment
      3. 18dB AGC R.B Level adjustment
      4. 24dB AGC R.B Level adjustment
      5. ABB offset adjustment
      6. ALC level
      7. ----------------------------
      8. ----------------------------
      9. ----------------------------
     10. ----------------------------
     11. ----------------------------
     12. ----------------------------
     13. ----------------------------
     14. ----------------------------
```

1. The display "CAMERA ADJUSTMENT MENU" appears.
2. Select "6. ALC level".

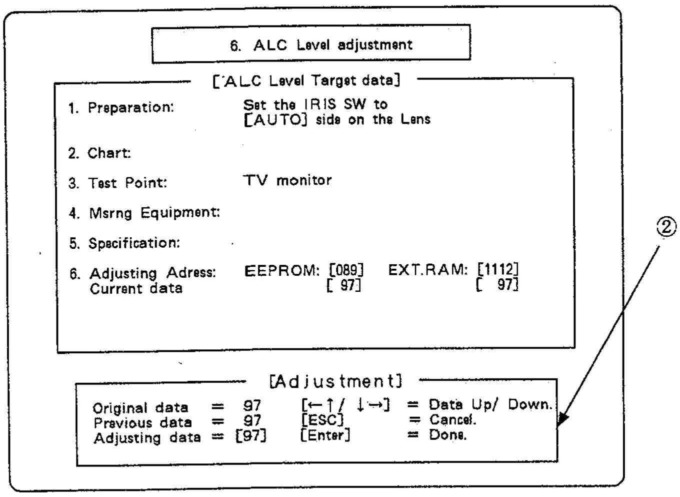
STEP 3



```
              6. ALC Level adjustment

 ------------- [ALC Level Target data] --------------
 1. Preparation:        Set the IRIS SW to
                        [AUTO] side on the Lens

 2. Chart:

 3. Test Point:         TV monitor

 4. Msrng Equipment:

 5. Specification:

 6. Adjusting Adress:   EEPROM: [089]   EXT.RAM: [1112]
    Current data                [ 97]            [  97]

 ---------------- [Adjustment] ----------------------
  Original data  =  97    [←↑/ ↓→]  = Data Up/ Down.
  Previous data  =  97    [ESC]     = Cancel.
  Adjusting data = [97]   [Enter]   = Done.
```

1. The scene shown in the left figure appears.
2. The shaded portion (shown by ①) shows the following items.
    1. Preparation ···· Set the IRIS SW to [AUTO] side on the Lens.
    3. Test Point ···· TV monitor
    6. Adjusting Address and Current data ···· Address and Current data of EEPROM and EXT.RAM

STEP 4



```
6. ALC Level adjustment

[ALC Level Target data]
1. Preparation:          Set the IRIS SW to
                         [AUTO] side on the Lens
2. Chart:
3. Test Point:           TV monitor
4. Msrng Equipment:
5. Specification:
6. Adjusting Adress:     EEPROM: [089]   EXT.RAM: [1112]
   Current data                  [ 97]            [  97]

[Adjustment]
Original data  =  97    [←↑/ ↓→]  = Data Up/ Down.
Previous data  =  97    [ESC]     = Cancel.
Adjusting data = [97]   [Enter]   = Done.
```

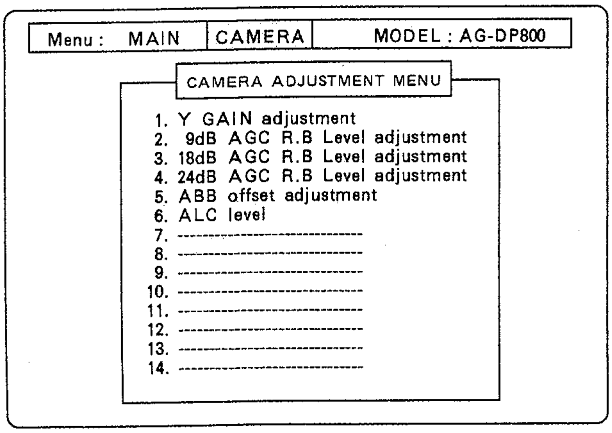
1. Perform adjustments at the shaded portion (shown by ②).
   1. Original data ···· It shows the data set at the factory.
   2. Previous data ···· It shows the value before adjustment.
   3. Adjusting data ···· It shows the current adjusting value.

   ※ All value are shown in hexadecimal number and from "00" to "FF".

STEP 5

1. Adjust the ALC Level by the [←] , [↑] , [↓] and [→] keys.
   Each key operates as shown below.
   [↑] ···· adjusting value increases by "1"
   [↓] ···· adjusting value decreases by "1"
   [→] ···· adjusting value increases by "16"
   [←] ···· adjusting value decreases by "16"
2. After adjustment, press the Enter key.
   By performing this operation, adjusting value is written in the Adjustment Addresses of EEPROM and EXT.RAM, and display returns to the scene at STEP 2.
   [Enter] ···· writing adjusting value and the display returns to "CAMERA ADJUSTMENT MENU".
3. When quitting adjustment, press the ESC key.
   By performing this operation, adjusting value isn't written in the Adjustment Addresses of EEPROM and EXT.RAM and adjusting value returns to the value before adjustment. The display returns to "CAMERA ADJUSTMENT MENU".
   [ESC] ···· quitting adjustment without writing adjusting value

STEP 6



```
Menu :  MAIN  | CAMERA |     MODEL : AG-DP800

CAMERA ADJUSTMENT MENU
 1. Y GAIN adjustment
 2.  9dB AGC R.B Level adjustment
 3. 18dB AGC R.B Level adjustment
 4. 24dB AGC R.B Level adjustment
 5. ABB offset adjustment
 6. ALC level
 7. ----------------------------
 8. ----------------------------
 9. ----------------------------
10. ----------------------------
11. ----------------------------
12. ----------------------------
13. ----------------------------
14. ----------------------------
```

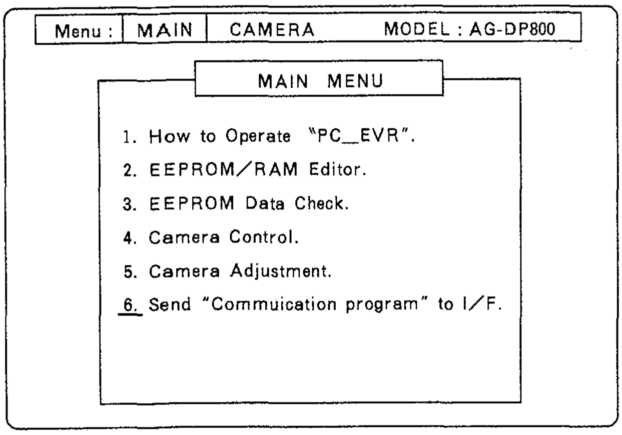
1. After performing adjustment, press the [←] key. Then the display returns to the "MAIN MENU".

※ When returning the ALC Level to the initial value set at the factort, write the original data "97" at STEP 5.

6. Send "Communication Program" to I/F.

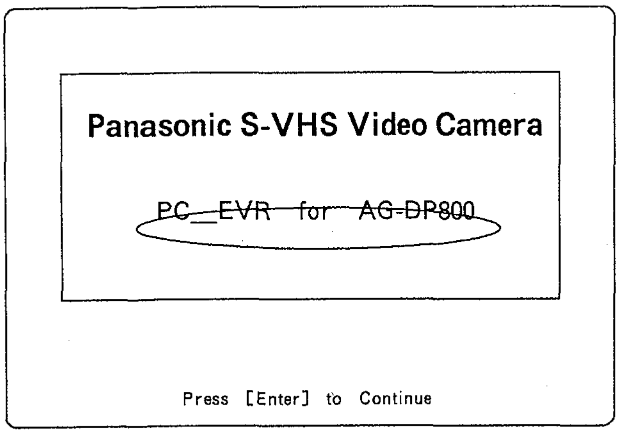
- This menu establishes the communication from the computer to the camera through the I/F Box Unit.
- The "Communication Program" can be downloaded again to the I/F Box Unit without returning to STEP 1 of "1-2. How to start the PC-EVR software" in the following cases.
  1. When performing Power on/off sequence in wrong order,
  2. When re-establishing communication to the I/F Box Unit after reboot,

STEP 1


Menu : MAIN CAMERA MODEL : AG-DP800
MAIN MENU
1. How to Operate "PC_EVR".
2. EEPROM/RAM Editor.
3. EEPROM Data Check.
4. Camera Control.
5. Camera Adjustment.
6. Send "Commuication program" to I/F.

1. Open the Main Menu.
2. Select '6. Send "Communication program" to I/F' . (Move the "_" mark to the "6." position and press the Enter key.) .

STEP 2


Panasonic S-VHS Video Camera
PC_EVR for AG-DP800
Press [Enter] to Continue

1. The display returns to "Starting Display" as shown in the left figure.
2. Follow the steps from 3 to 8 of "1-2. How to start the PC-EVR Software."

ORDER NO. VSD9406D210
D4

Service Manual

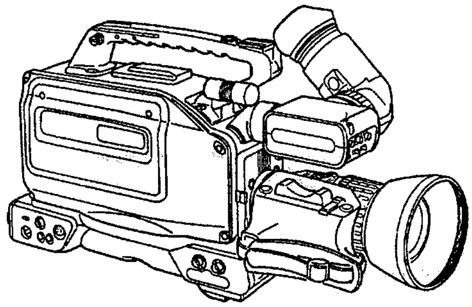
Supplement

V114P6

Camera / VTR

AG-DP800

(NTSC / PAL)



Subject: Technical Descriptions

Panasonic

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⚠ WARNING

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INTRODUCTION

This Supplement Service Manual contains the technical description which service personnel to understand and service the Panasonic S-VHS Camera／VTR model AG-DP800.

Please use this service manual together with the Service Manual as following order number.
For the AG-DP800P／HP : Order No. VSD9406M252A,B,C.
For the AG-DP800E／EG／HE／HEG : Order No. VSD9408M636A,B,C.

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1. CAMERA SECTION

A new digital signal processing technology has been developed for use in the AG-DP800 3CCD Camera/VTR. The camera section within the AG-DP800 offers high sensitivity, high resolution, high signal to noise ratio and low smear characteristics. The camera employs a precise, high resolution prism system, utilizing 1/2" FIT CCDs that results in excellent picture quality, offering users more than 700 lines (AG-DP800H is 750 lines) of horizontal resolution. The NTSC model has 380,000 pixels and the PAL model uses 450,000 pixels.

[General Description]

This section is divided into five sections as shown in the simplified block diagram below.

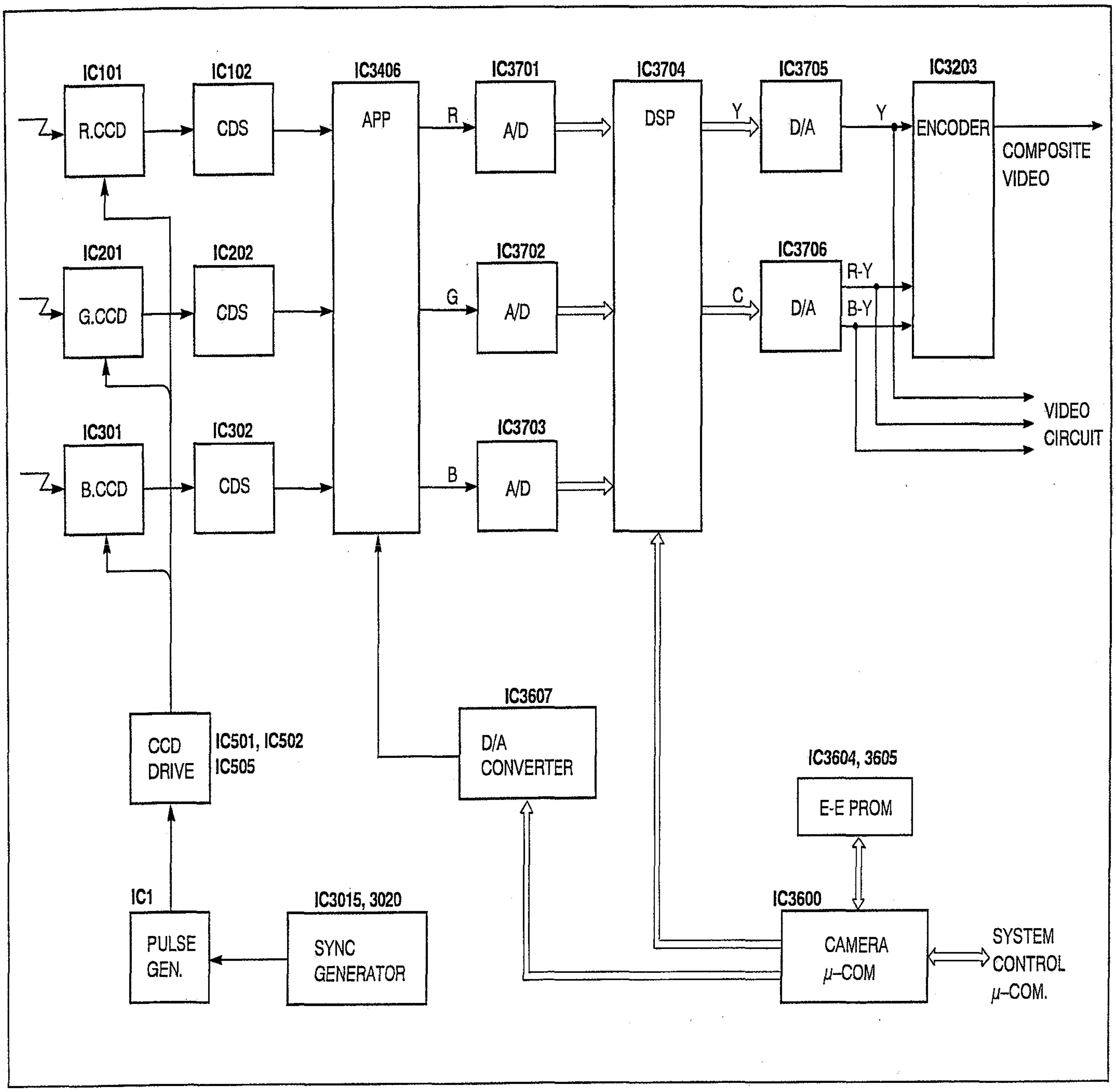

IC101
R.CCD
IC102
CDS
IC3406
APP
R
IC3701
A/D
IC3704
DSP
Y
IC3705
D/A
Y
IC3203
ENCODER
COMPOSITE
VIDEO
IC201
G.CCD
IC202
CDS
G
IC3702
A/D
C
IC3706
D/A
R-Y
B-Y
VIDEO
CIRCUIT
IC301
B.CCD
IC302
CDS
B
IC3703
A/D
IC3607
D/A
CONVERTER
CCD
DRIVE
IC501, IC502
IC505
IC3604, 3605
E-E PROM
IC1
PULSE
GEN.
IC3015, 3020
SYNC
GENERATOR
IC3600
CAMERA
μ-COM
SYSTEM
CONTROL
μ-COM.

Figure C1 Simplified Block Diagram for Camera Section

1) Optical and CCD
2) Analog Pre-Process Circuit (APP)
3) Digital Signal Process Circuit (DSP)
4) Encoder Circuit
5) System Control Circuit (Camera MPU)

1) Optical and CCD

This section is comprised of the lens, filter, prism and CCDs. The combination of these helps decide the camera's specification. This camera uses the 3 FIT (Frame Interline Transfer) CCDs.
Light entering the camera is focused by the lens and is passed through filters to correct color temperature. Next the prism separates the light into the primary colors (Red, Green and Blue) and transmits each color to the appropriate CCD.

2) Analog Pre-Process (APP)

This circuit provides the OB, AWB, AGC and Pre-Knee / Gamma correction to the incoming signal before the signal is digitized and processed in next section.

3) Digital Signal Process (DSP)

This circuit uses digital techniques to improve the quality of the picture and stability. After the APP section, the signal is A/D converted and supplied to DSP section.
The DSP circuit provides the H / V Detail, Auto Knee, Coring and color bar generator. Within the DSP circuit, the R G B signal is decoded to Y, R-Y, B-Y and is D/A converted for encoding.

4) Encoder

The encoder combines the Y, R-Y and B-Y signals into the composite video signal and applies it to both the camera video out and 26 pin VTR out connectors.

5) Camera System Control (Camera MPU)

The camera has it's own microprocessor that generates control signals for both the analog (APP) and digital (DSP) processing circuits. Two EE PROMs (Electrical Erasable Program Read Only Memory) that store scene file, adjustments value and hour meter data.
These devices reduce the number of potentiometer (variable resistor) adjustments which results in a lighter and more reliable camera.

[Detailed Description]

1-1. Optical System (Lens and Filters stack)

The filters composed of four elements: IR filter, ND filter, Color conversion filter and Crystal filter.

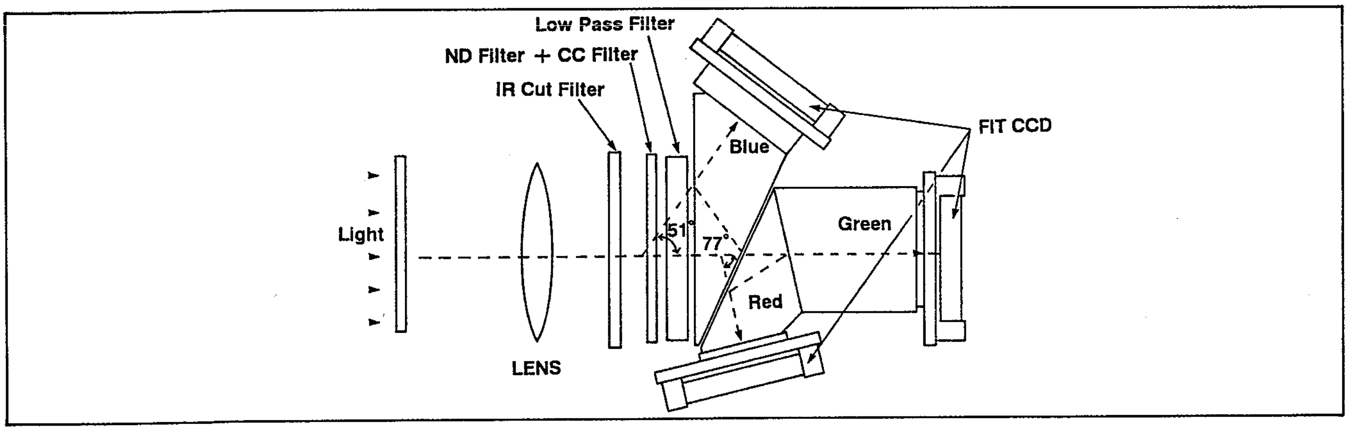


Figure C2 Optical Assembly

1) IR (Infrared Cut) Filter

The CCD are very sensitive to infrared light. If this light is not filtered out before it reaches the CCD image sensor, this will result in poor color reproduction (especially at low luminance levels).
The IR filter is placed in the first row of filters after the lens and serves to reduce infrared rays as shown in Figure C3. This filter also offers protection against the ingress of dust.

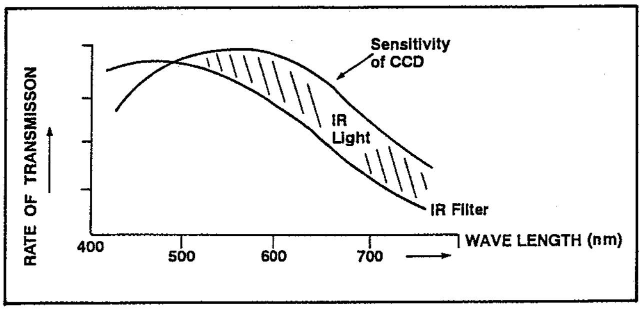


Figure C3 IR Cut Filter Characteristics

2) Color Temperature Conversion Filter (CC filter)

The camera is normally adjusted for standard color temperature of 3,200K illumination. If the color temperature exceeds 3,200K (such as outdoor light 5,600K), the reproduced image will have a bluish tint to it. If the color temperature is less than 3,200K (such as low light situations), the reproduced image will have a reddish tint to it.
This camera is equipped with two CC filters to correct the color temperature of the scene to 3,200K. The available settings are shown in below.

FILTER No.	COLOR CONVERSION	SOURCE CONDITION
1	3,200K	HALOGEN or TUNGSTEN LAMP
2	5,600K+1/8ND	DAY LIGHT (SUNNY)
3	5,600K	DAY LIGHT (CLOUDY)

3) Neutral Density (ND) Filter

This camera is designed to handle a light intensity of 2,000 lux / F8.0. When an object has light intensity which exceeds this value, the ND filter can be used to reduce it to level which the iris can handle. This 1/8 ND filter is active when filter number 2 is selected.

4) Optical Low Pass Filter (Crystal Filter)

As shown in Figure C4, it can be seen that the CCDs have a frequency response which dips sharply at 6.75MHz. The CCD elements effectively sample the image at 13.5MHz (380,000 samples per field for NTSC, 450,000 for PAL). Any light response above 6.75MHz will cause aliasing and moiré patterning.
This filter consists of four elements, each cut as a different angle low pass filter, resulting in a filter cutoff of 6.75MHz. The cuts and overall response are shown in Figure C5.

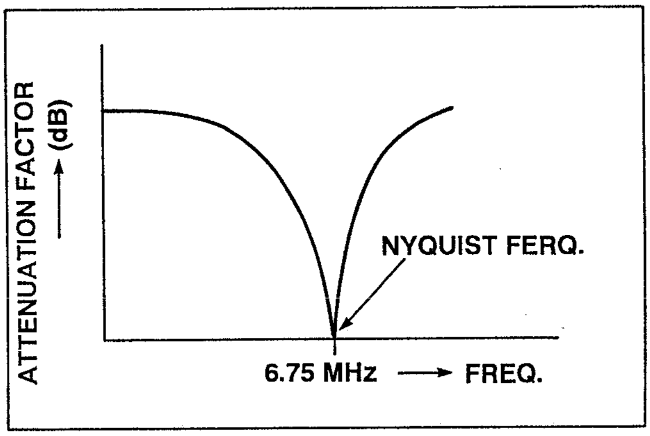
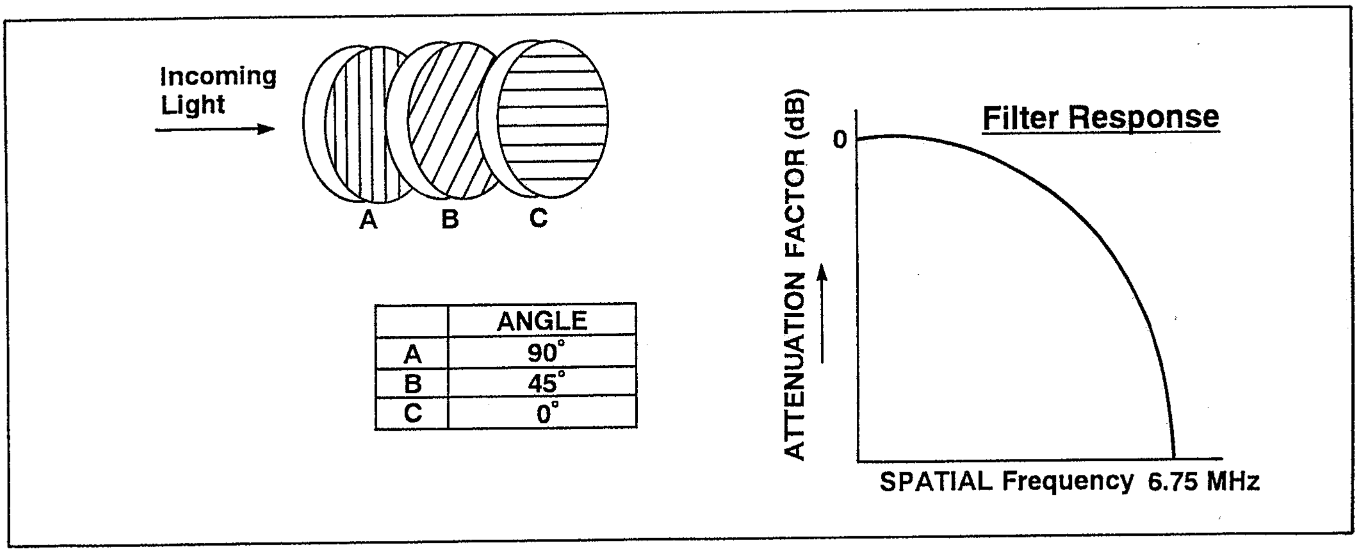


Figure C4 CCD Frequency Response



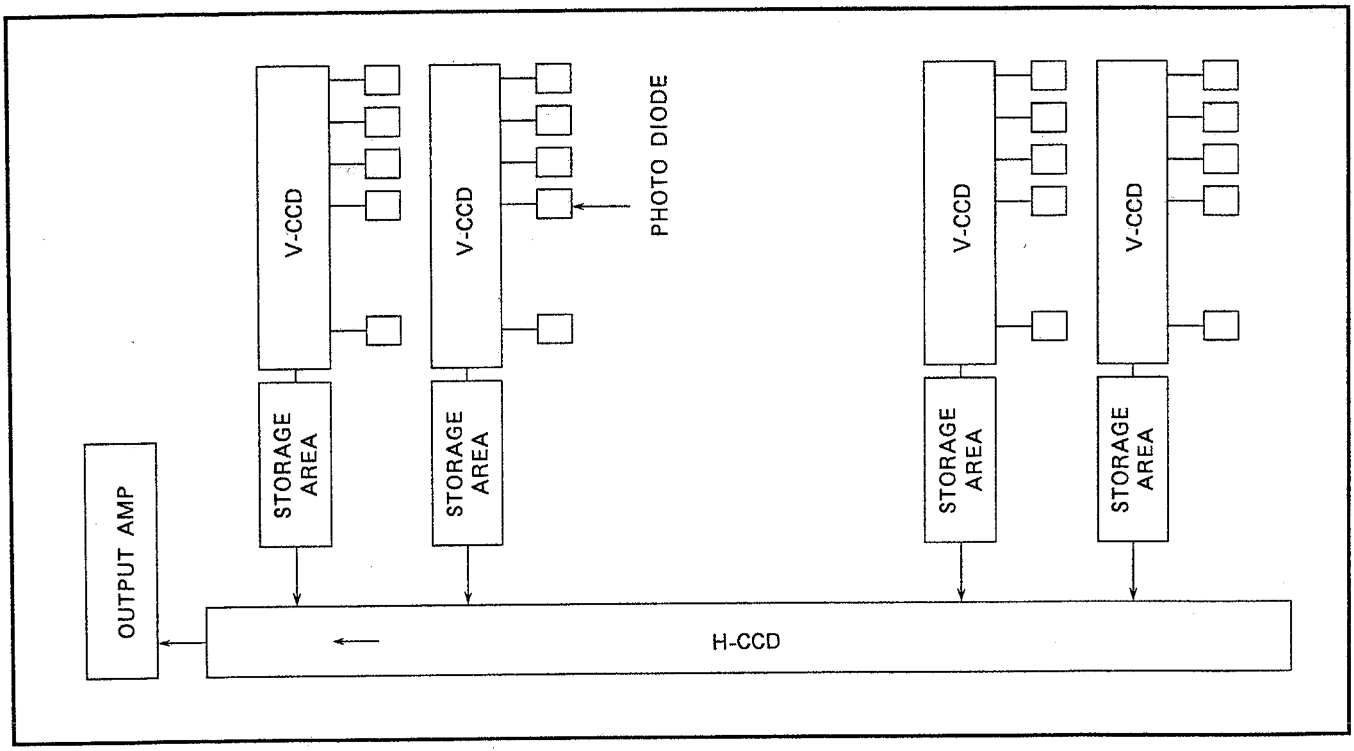
	ANGLE
A	90°
B	45°
C	0°

Figure C5 Crystal Filter Construction

1-2. CCD (Charge Coupled Device) Image Sensor

1) Structure of FIT CCD

The CCD can be thought of an integrated circuit (IC) with an optical window as shown in Figure C6.


V-CCD
V-CCD
PHOTO DIODE
V-CCD
V-CCD
STORAGE AREA
STORAGE AREA
STORAGE AREA
STORAGE AREA
OUTPUT AMP
H-CCD

	NTSC MODEL	PAL MODEL
Picture Element	380,000	450,000
Horizontal Picture Pixel	726	716
Vertical Picture Pixel	492	582
Storage Area	500	590

Figure C6 Structure of FIT CCD

2) CCD Classification

There are three types of CCDs: Interline Transfer (IT), Frame Transfer (FT) and Frame Interline Transfer (FIT). The unit uses FIT type CCD. The different characteristics of these types of CCDs are explained in Figure C7.

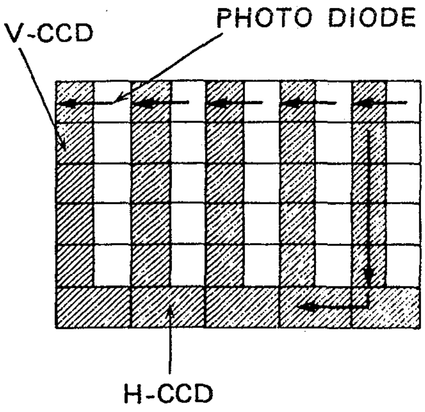
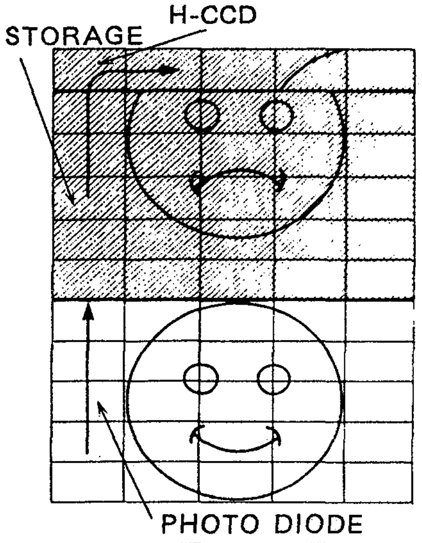
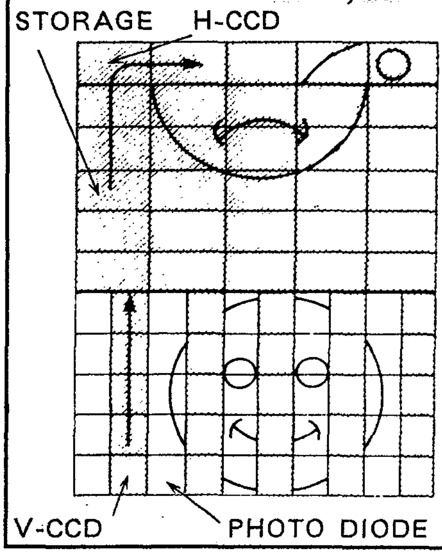
TYPE OF CCD	ACTION	FEATURE
IT (INTERLINE TRANSFER)CCD  	It consists of PDs, V-CCDs and H-CCD. 1. Photo diode converts the light into a change corresponding to the level of incoming light. 2. V-CCD accumulates the charge from photo diodes and transfers the charge in a vertical direction to H-CCD. 3. H-CCD transfers the charge in a horizontal direction to the output.	∗ Chip size is small against FIT ∗ Low sensitivity ∗ Output has a false signal a lot ∗ There is little smear (it level is less than FT)
FT (FRAME TRANSFER)CCD  	It consists of PDs, storage and H-CCD. 1. Photo diode converts the light into a charge corresponding to the level of incoming lignt and then vertically transfer all the chage in parallel to storage. 2. Storage transfers the change in a vertical direction to H-CCD. 3. H-CCD transfers the charge in a horizontal direction to the output.	∗ Chip size is small against FT ∗ High sensitivity ∗ Blue is week in the sensitivity ∗ Output has a smear a lot
FIT (FRAME INTERLINE TRANSFER)CCD  	It consists of PDs, V-CCDs, Storage and H-CCDs. 1. Photo diode converts the light into a charge corresponding to the level of imcoming light. 2. V-CCD accumulates the charge from photo diode and instantly transfers all the charge in a vertical direction and in parallel, to storage. 3. Strage transfers the charge in a horizontal direction to the output.	∗ Chip size is big against IT, FT ∗ Low sensitivity ∗ Output has a false signal a lot ∗ Low smear

Figure C7 CCD Classification

3) Spatial Offsets of CCD

The spatial offset is a method used to improve the horizontal luminance resolution of the CCD. The CCDs are aligned on the prism assemblies with horizontally offset of 1/2 pixel distance between the green element and red & blue elements. The red and blue elements are aligned to same axis. (see Figure C8). The luminance signal is generated by mixing the 3 signals in the following ratio;

$Y=0.3R + 0.59G + 0.11B$

If the red and blue photo diodes are aligned between the green photo diode, the sampling points becomes twice that of the luminance signal (see Figure C9). A theoretical doubling of the horizontal resolution is possible using this technique. In fact, an increase of approximately 1.3 to 1.5 times the monochrome resolution due to mixing the red, green and blue signals.

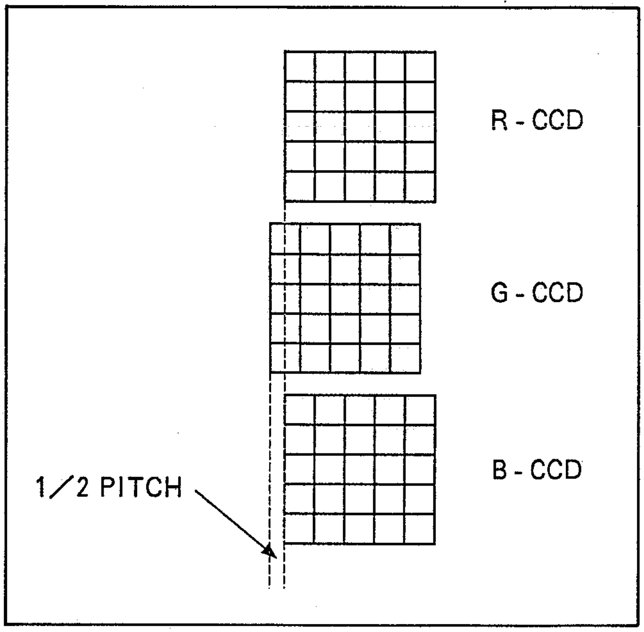


Figure C8 CCD Spatial Offsets (1)

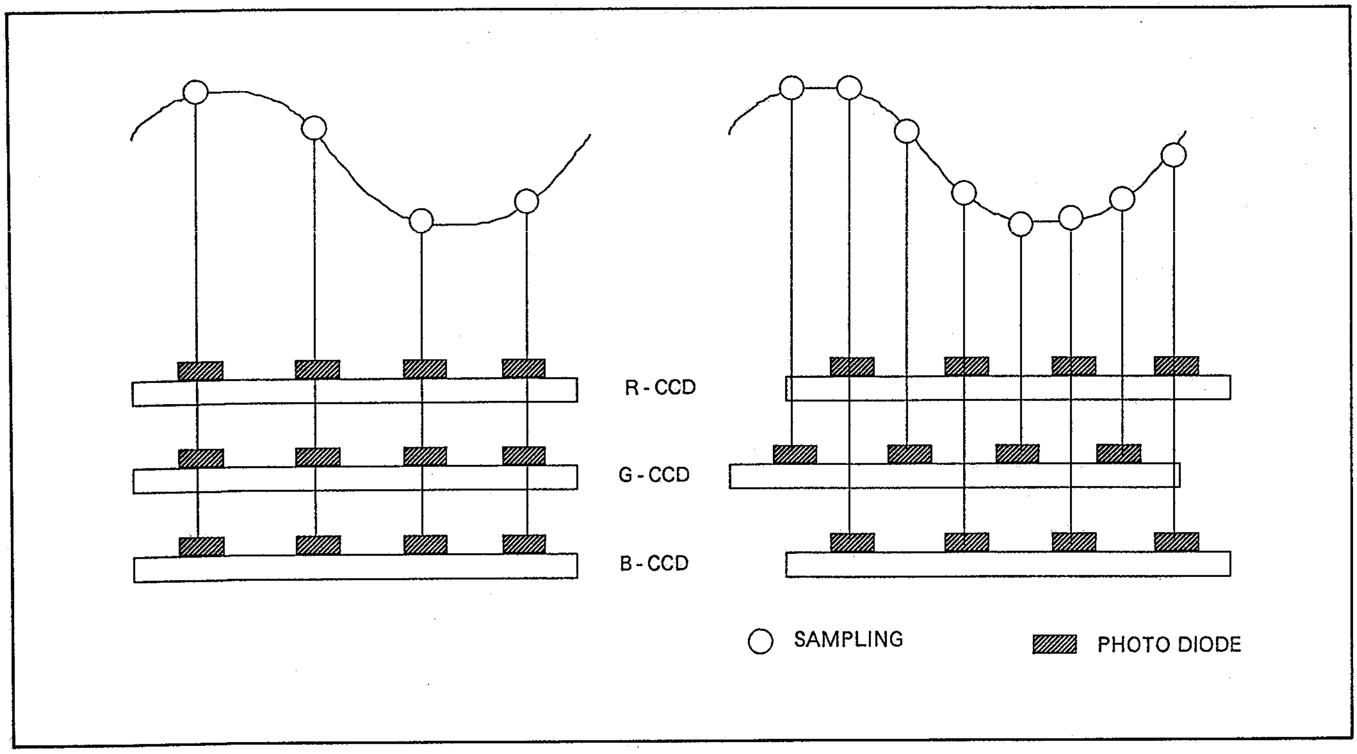


Figure C9 CCD Spatial Offsets (2)

4) CCD Charge Transfer Method

For interline transfer of the CCD, there are two charge methods for signal generation. One is field mode, the other is frame mode.

In the AG-DP800, the charge on the pixels are transferred to the shift register at field rate (60Hz for NTSC, 50 Hz for PAL). The charge transfer process is shown in Figure C10.

a. The photo diode converts light into a charge which is proportional to the incoming light intensity as shown in Figure C10-(1).

b. The charge is instantly transferred to the V-CCD from all the photo diodes at the same times shown in Figure C10-(2).

c. The charges are mixed during the vertical blanking period. In an odd field, the charge GV3 moves down to GV1 thru GV4 and the charge are mixed. This mixed charge comprises one picture element of the TV scan line as shown in Figure C10-(3).
There are 492 vertical array of photo diodes for NTSC (582 arrays for PAL), the 246 picture elements for NTSC (291 array for PAL) are produced in the each V-CCD at this time.
Finally, the V-CCDs transfer the charge (in parallel) to a storage area. This charge in the storage area is then transferred to H-CCD and generates each TV field scanning signal.

d. In the even field, the charge of GV1 moves down to GV3 thru GV2 and charges are mixed the same as in the odd field description above. The charge mixing is alternates every field to achieve interlace scanning, as shown in Figure C10-(4).

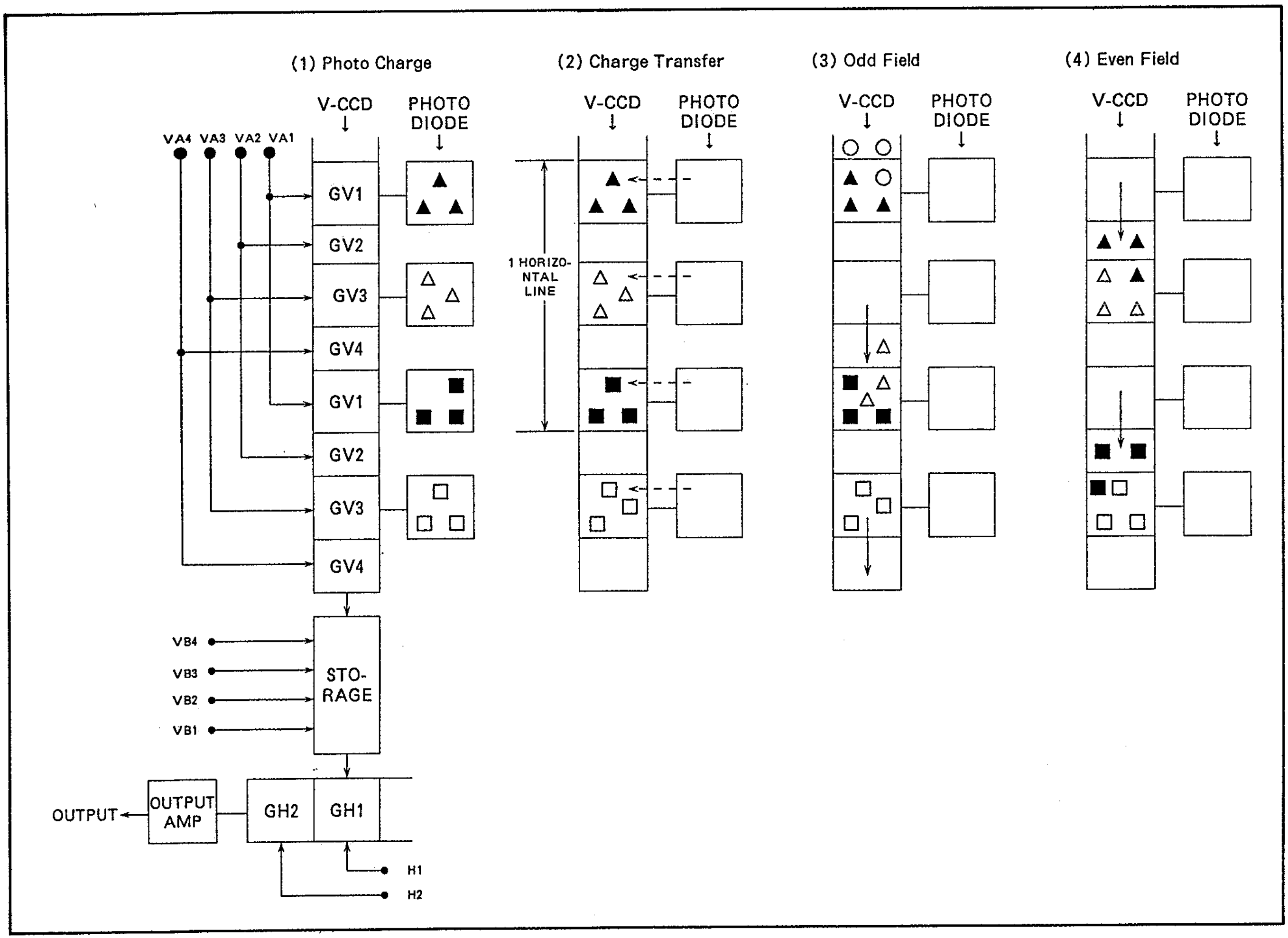

(1) Photo Charge
(2) Charge Transfer
(3) Odd Field
(4) Even Field
V-CCD
PHOTO DIODE
VA4
VA3
VA2
VA1
GV1
GV2
GV3
GV4
1 HORIZONTAL LINE
VB4
VB3
VB2
VB1
STORAGE
OUTPUT
OUTPUT AMP
GH2
GH1
H1
H2

Figure C10 CCD Charge Transfer (Field Mode)

1-3. CCD DRIVE CIRCUIT

1) CCD DRIVE

The CCD requires four types of drive as shown below.

a. A high speed driver to transfer the charge from the CCDs to the storage area.

b. A frame rate driver to transfer the change from the CCDs to the vertical shift register.

c. A line rate driver shifts the data down the vertical shift register and finally to the horizontal shift register.

d. A clock to transfer the charge out of the horizontal shift register.

As can be seen Figure C11, the 27 MHz crystal oscillator is phase locked to the horizontal drive at IC2. This clock is then divided by 858 (864:PAL), and goes to IC1 that generate a correctly phased H pulse to the CCD horizontal driver (IC505). The incoming vertical drive passes thru IC1 and goes to CCD vertical driver (IC501) and CCD storage driver (IC502).

The clock used to transfer the data from the horizontal shift register comes from the 1/2 divider in IC1 and runs 13.5 MHz. This same clock drives the digital processing section. The 27 MHz clock signal is fed directly to D/A converter of the DSP section because the spatial offset of CCD. The output signal should be sampled at twice frequency versus the CCD sampling frequency for true reproduction.

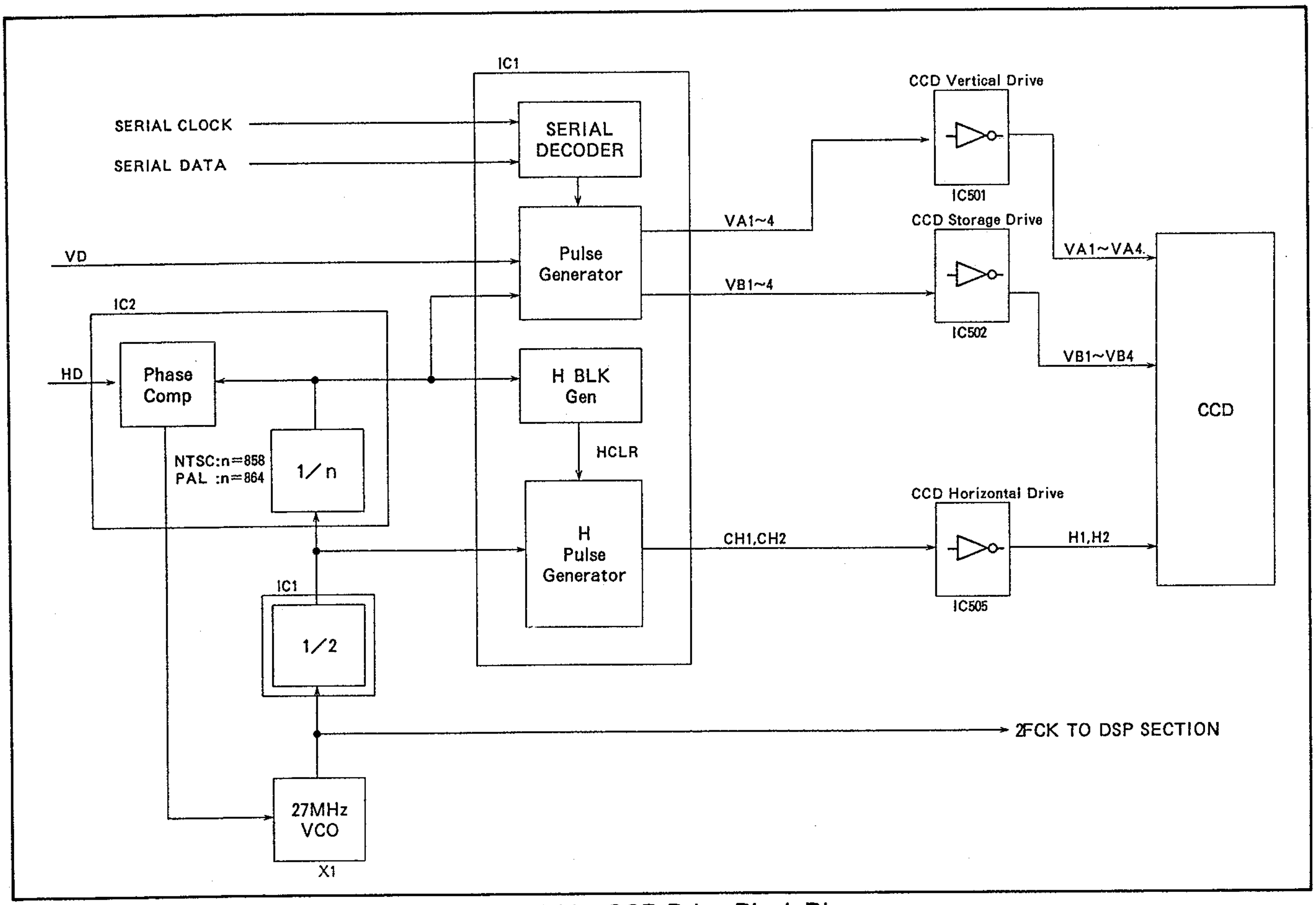

IC1
SERIAL CLOCK
SERIAL DATA
SERIAL DECODER
VD
Pulse Generator
VA1~4
VB1~4
IC2
HD
Phase Comp
H BLK Gen
HCLR
NTSC:n=858
PAL :n=864
1/n
IC1
1/2
H Pulse Generator
CH1,CH2
CCD Vertical Drive
IC501
CCD Storage Drive
IC502
VA1~VA4
VB1~VB4
CCD
CCD Horizontal Drive
H1,H2
IC505
2FCK TO DSP SECTION
27MHz VCO
X1

Figure C11 CCD Drive Block Diagram

The vertical shift register, shift pulse timing is quite complex. The timing of these vertical drive pulse is shown in Figure C12.

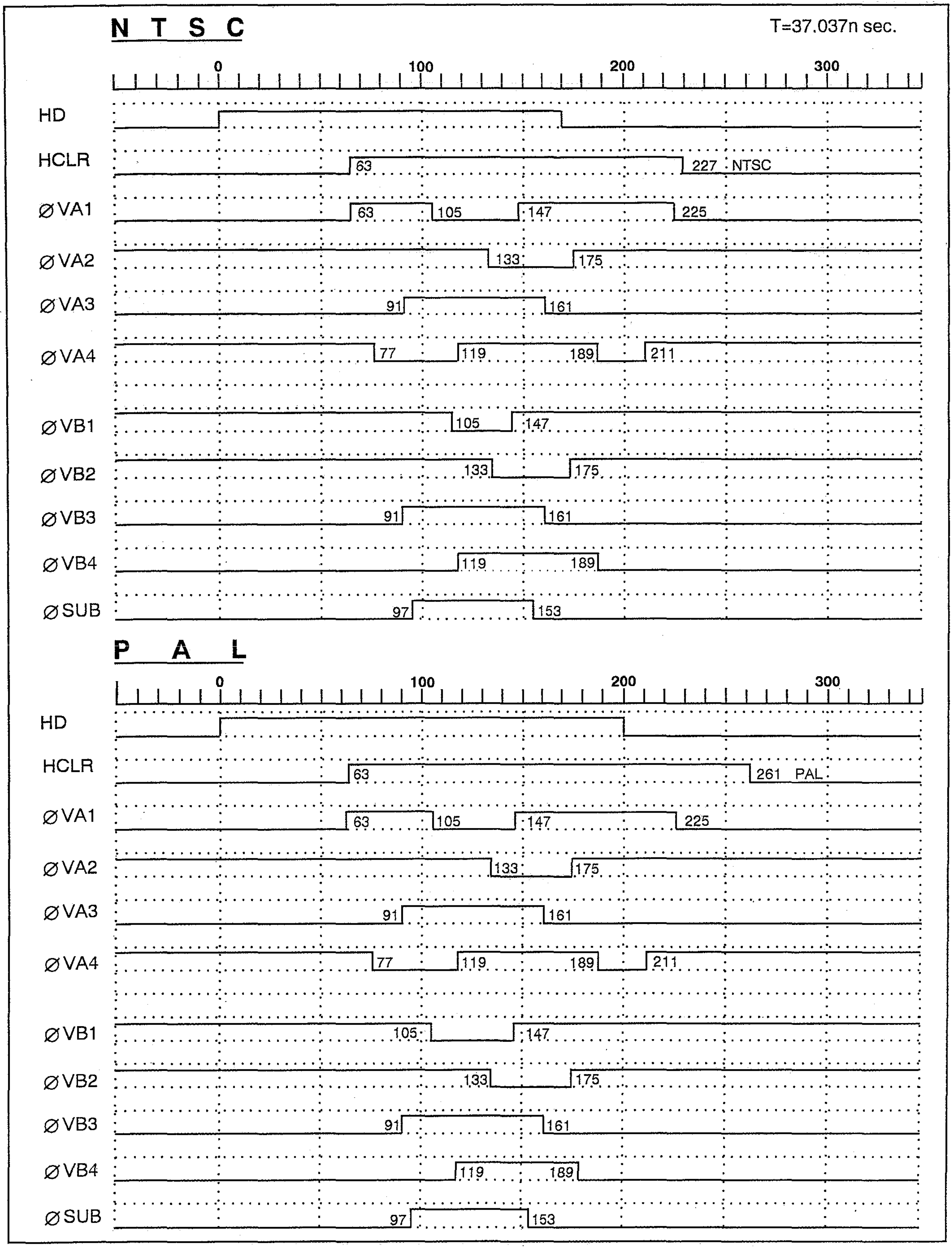

N T S C
T=37.037n sec.
0
100
200
300
HD
HCLR
63
227 NTSC
ØVA1
63
105
147
225
ØVA2
133
175
ØVA3
91
161
ØVA4
77
119
189
211
ØVB1
105
147
ØVB2
133
175
ØVB3
91
161
ØVB4
119
189
ØSUB
97
153
P A L
0
100
200
300
HD
HCLR
63
261 PAL
ØVA1
63
105
147
225
ØVA2
133
175
ØVA3
91
161
ØVA4
77
119
189
211
ØVB1
105
147
ØVB2
133
175
ØVB3
91
161
ØVB4
119
189
ØSUB
97
153

Figure C12 CCD Vertical Drive Timing

2) HIGH SPEED SHUTTER

(GENERAL)

Unlike film cameras that use mechanical shutters, CCD cameras can make changes to the way the vertical shift register is read out, enabling the camera to emulate a high speed "mechanical" shutter.
The reason for the feature is to eliminate "blurry" images of fast moving objects, when observed in still or slow-motion of the VTR's playback.

The normal charging time of CCDs is 60 Hz (50 Hz:PAL) then sent to the V-CCD. To achieve the shutter effect, the charging time is shortened (1/500, 1/1000, 1/2000 etc.) and the charge is output to V-CCD sensor. Unfortunately when operation is used, the light intensity is also decreased, resulting in a darker image.

As shown in Figure C13, during the blanking period (4), the photo diode start charging. At the end of this period, the charges on A1, A2 and A3 on the V-CCD are stored before the high speed transmission pulse aborts the process. All charges in the V-CCD are cleared during this period, shifting (period 5).

After this charge has been shifted, the next charge (B1 to B3) in the PD is sent to the V-CCD during period 6 and normal shifting is performed. This charge (B1 to B3) is used to create the picture in the high speed shutter mode (Figure C13).
At the same time, the PD is charging again, however, this will be aborted during the next blanking period so it is not used to create the picture. If high speed charging is performed for 1/2000 second, the following items should be noted:

1. In the PAL model, since the high shutter speed is 1/2000 second (the normal speed being 1/50 second), this model requires forty times the illumination of the normal mode. In other words, sensitivity becomes 1/20th (the minimum illumination being 200 lux in comparison with 10 lux in normal mode).

2. When using NTSC model in high speed shutter mode, natural light sources should be used since artificial lamp (incandescent , fluorescent, mercury, etc.) will cause a flicker due to the 50Hz power source frequency.

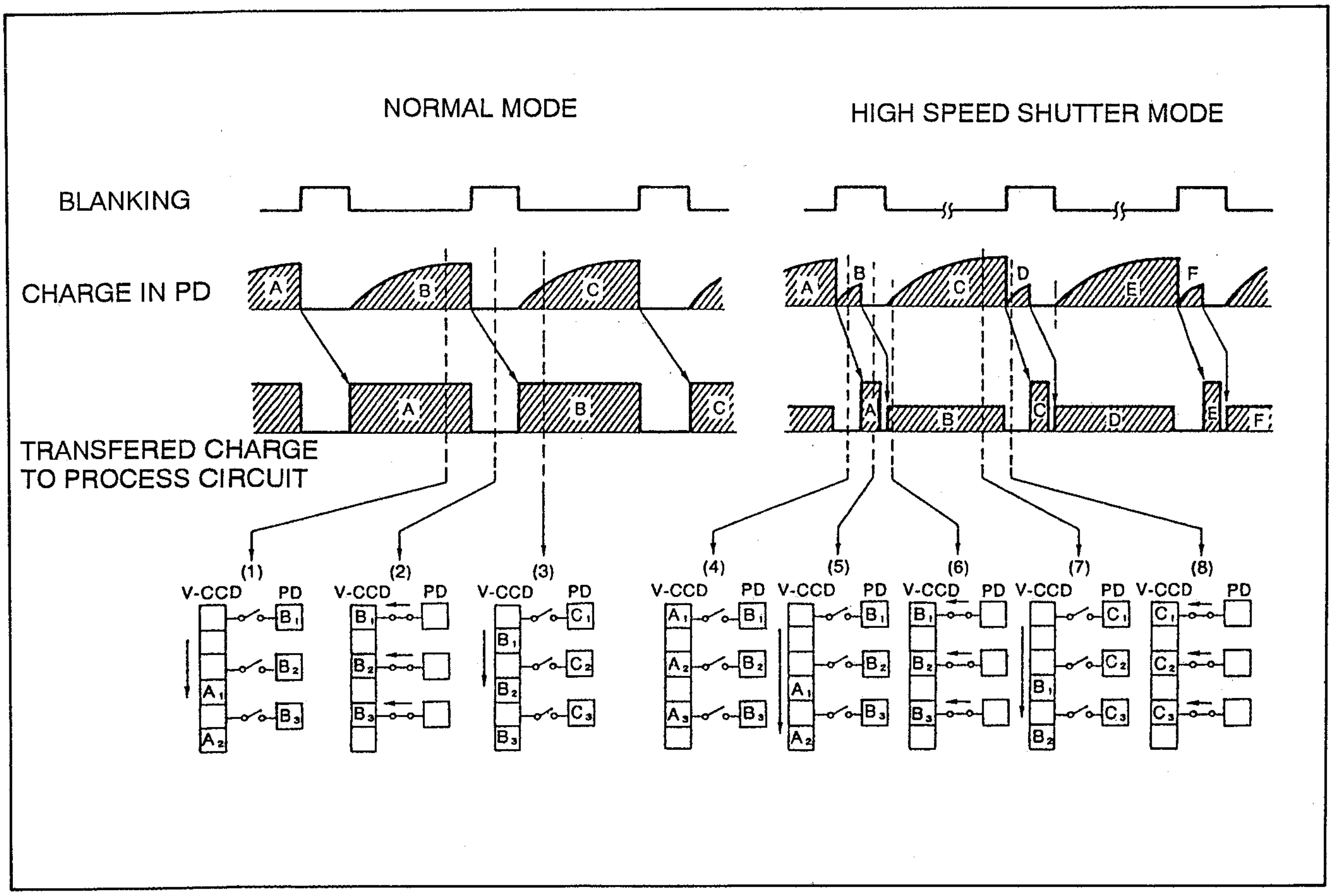


Figure C13 Charging for Normal and High Speed Shutter Mode

The control for the electronic shutter is generated on the CCD drive board. The block diagram is shown in Figure C14.

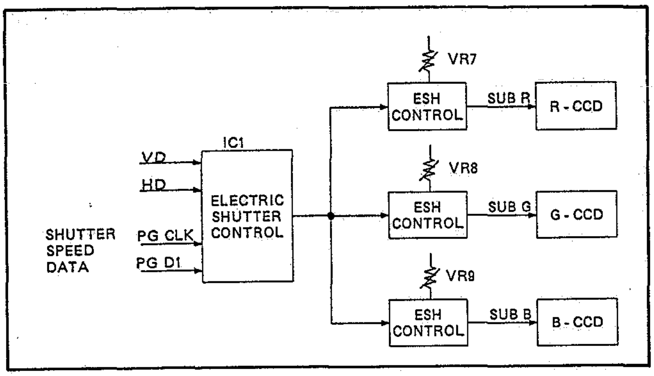

VR7
ESH CONTROL
SUB R
R-CCD
IC1
VD
HD
ELECTRIC SHUTTER CONTROL
SHUTTER SPEED DATA
PG CLK
PG D1
VR8
ESH CONTROL
SUB G
G-CCD
VR9
ESH CONTROL
SUB B
B-CCD

Figure C14 Electronic shutter

For faster shutter speeds, the electronic shutter generates a pulse to discharge to CCD so that the effective image exposure time is reduced. The shutter speed is determined by the interval between the shutter pulse and the pulse which transfers the data from the CCDs.

The smaller the interval, the faster the shutter - the maximum shutter speed being 1/200 second. The pulse timings for each shutter speed are illustrated in the Figure C15.

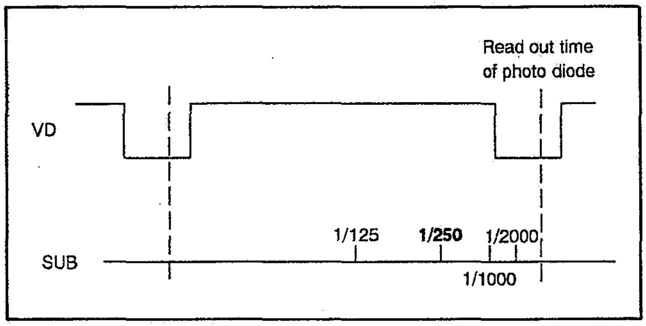

Read out time of photo diode
VD
SUB
1/125
1/250
1/2000
1/1000

Figure C15 CCD Electronic Shutter Control Pulse

3) Vertical Fine

The vertical fine function increases the vertical resolution by changing the CCDs at the frame rate 30 Hz (PAL: 25 Hz), instead of the field rate.
At this time, the CCD charges are not mixed in the transfer process, but because of no longer charging time, lag increases. Figure C16 shows the CCD transfer in vertical fine mode.

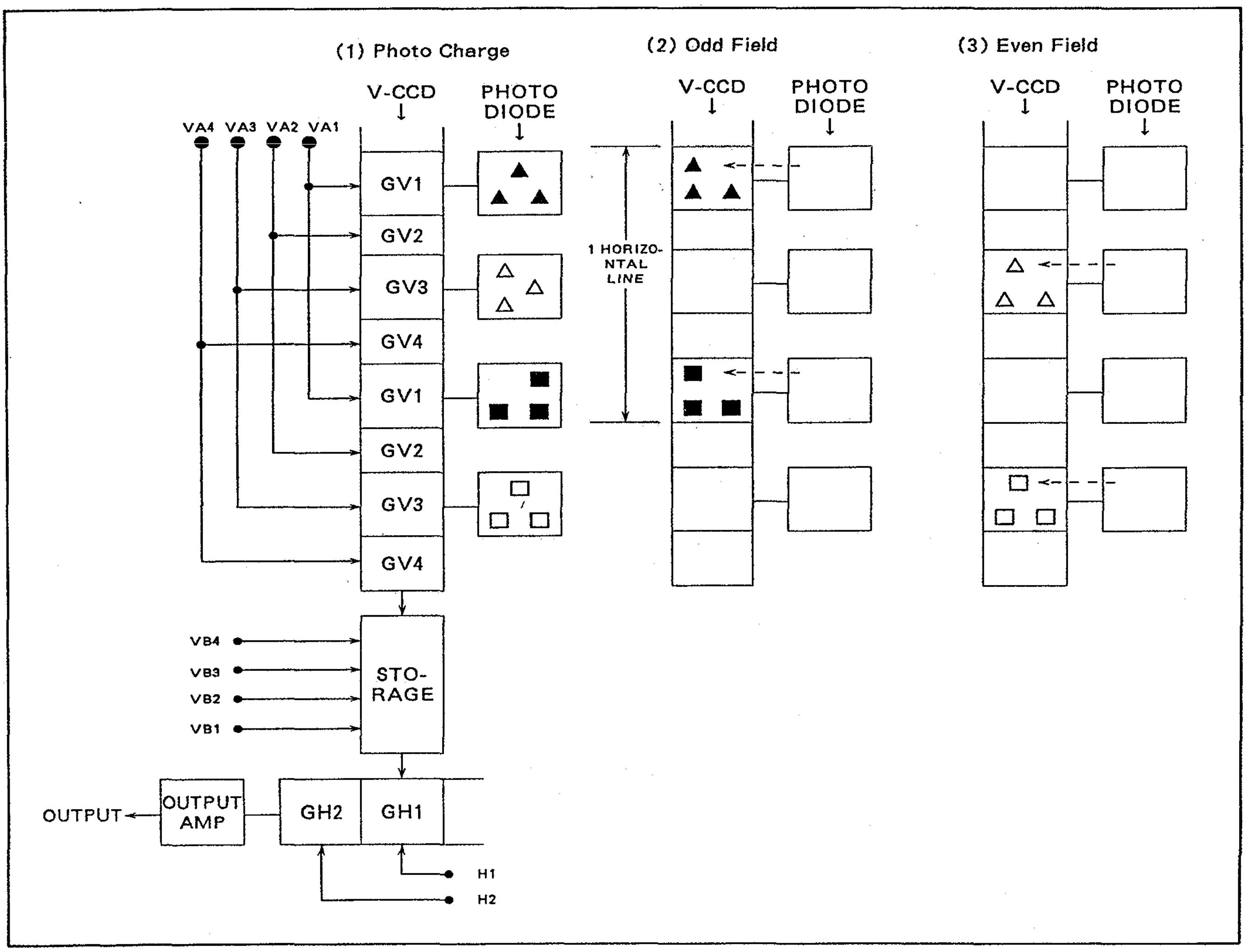

(1) Photo Charge
(2) Odd Field
(3) Even Field
V-CCD
PHOTO DIODE
VA4 VA3 VA2 VA1
GV1
GV2
GV3
GV4
1 HORIZONTAL LINE
VB4
VB3
VB2
VB1
STORAGE
OUTPUT
OUTPUT AMP
GH2
GH1
H1
H2

Figure C16 CCD Charge Transfer (Vertical Fine Mode)

1) Dark Shading Correction

Dark shading correction is used to adjust variations of different blocks within the CCD. Correction is applied to both horizontal and vertical blocks. The horizontal compensation is done by VR3402-3404 and VR3408-3410 on the Pre-Process board.
The vertical compensation is automatically done between IC3600 (camera MPU) and IC3704 (DSP chip) as shown in Figure C23. The dark shading waveforms are shown in Figure C21.

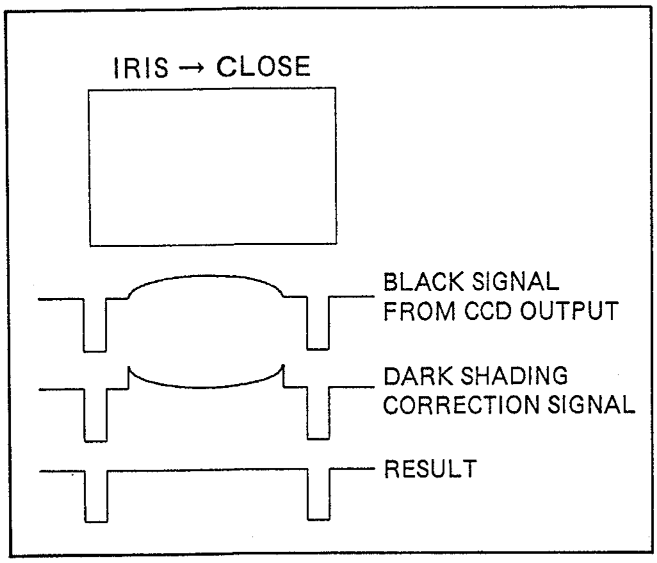

IRIS → CLOSE
BLACK SIGNAL FROM CCD OUTPUT
DARK SHADING CORRECTION SIGNAL
RESULT

Figure C21 Dark Shading Correction

When the ABB switch pressed, dark shading correction is carried out along with an auto black balance. The vertical dark shading value is stored in IC3704 (DSP chip) after the auto black balance done. The value is then read out to IC3600 (camera MPU). The microprocessor then serially transfers the data to the IC3607 (D/A converter).

The output of D/A converter is then applied the APP circuit as the control voltage for the gain control multiplier. If the ABB switch isn't pushed, IC3607 will be loaded with a preset value from IC3604, IC3605 (E-PROM) via camera microprocessor, as shown in Figure C22.

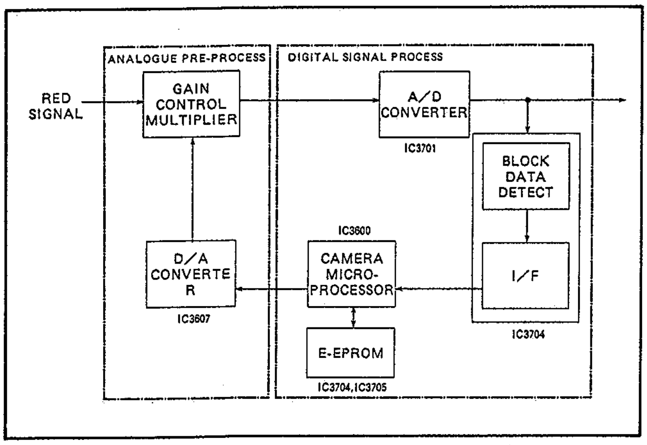

ANALOGUE PRE-PROCESS
DIGITAL SIGNAL PROCESS
RED SIGNAL
GAIN CONTROL MULTIPLIER
A/D CONVERTER
IC3701
BLOCK DATA DETECT
IC3600
D/A CONVERTE R
IC3607
CAMERA MICRO-PROCESSOR
I/F
IC3704
E-EPROM
IC3704,IC3705

Figure C22 Dark Shading Correction Block Diagram

The shading value stored in IC3704 (DSP chip) is generated when the dark shading is activated. To generate a value, the shading correction circuit measures the output of each A/D converter of the digital signal process circuit using the block data detection.
The measured value is compared to a reference on camera microprocessor. The result is used to generate shading correction to the D/A converter. The D/A's generates the analog correction signal to the APP gain control multiplier until the next dark shading correction is activated.

The block data detect circuit uses 8 horizontal and 6 vertical samples in the NTSC system (PAL system: 8 horizontal and 7 vertical samples). The block data detect circuit calculates an average value for each horizontal block (successive approximation) and these values are stored in IC3704 (DSP chip).
When the camera microprocessor reads these values from DSP, the value compared to a reference and the microprocessor generates an average for an area of the CCD as shown in Figure C23.

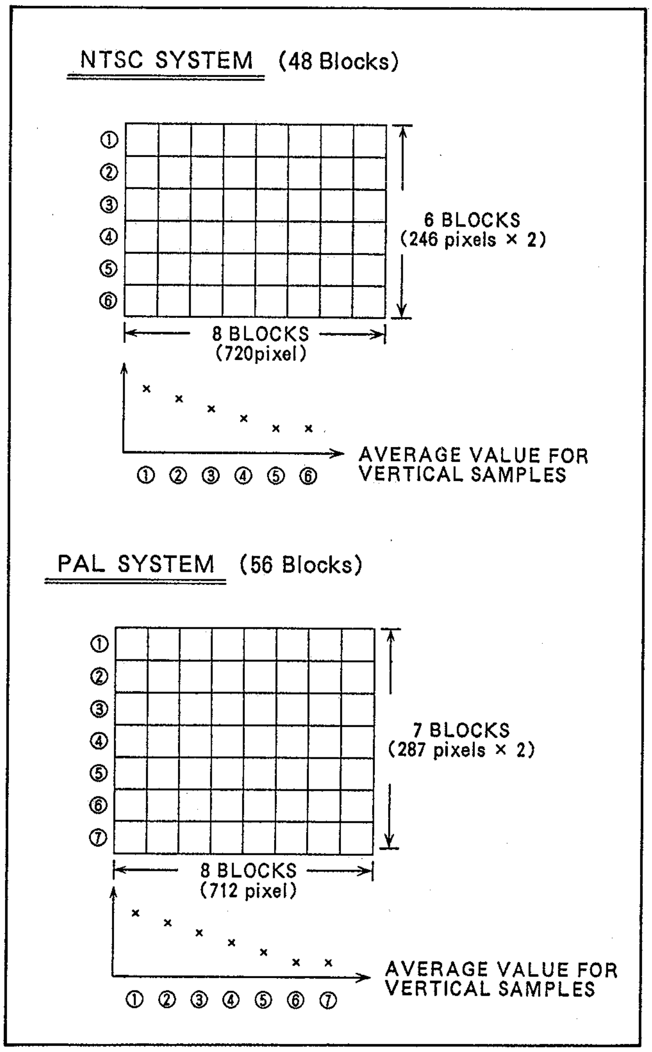

NTSC SYSTEM (48 Blocks)
① ② ③ ④ ⑤ ⑥
6 BLOCKS (246 pixels × 2)
8 BLOCKS (720pixel)
① ② ③ ④ ⑤ ⑥
AVERAGE VALUE FOR VERTICAL SAMPLES
PAL SYSTEM (56 Blocks)
① ② ③ ④ ⑤ ⑥ ⑦
7 BLOCKS (287 pixels × 2)
8 BLOCKS (712 pixel)
① ② ③ ④ ⑤ ⑥ ⑦
AVERAGE VALUE FOR VERTICAL SAMPLES

Figure C23 Block Dividing Chart of Dark Shading Correction

2) Optical Black Clamp

The CCD emits an output corresponding to the incoming light intensity, but when no light is present, an output current (dark current) is present. Since the dark current can fluctuate with varying operating temperatures, there is a possibility that the white balance will also vary with temperature changes.
To prevent this, the CCD is equipped with an optical black (OB) zone on the CCD surface. This zone cuts off the incoming light at the end of the horizontal scan. IC401 produces an clamp pulse for the optical black (CPOB), in order to regulate the sampling area. The CPOB samples the OB zone's signal level and clamps it to a known level.
Whenever the dark current drifts with temperature changes, the DC potential of the OB remain constant as shown in Figure C24.

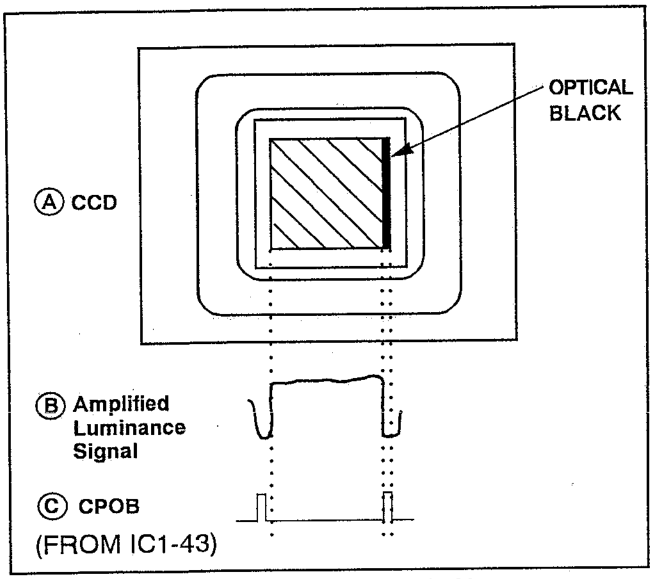

OPTICAL BLACK
Ⓐ CCD
Ⓑ Amplified Luminance Signal
Ⓒ CPOB
(FROM IC1-43)

Figure C24 Optical Black Clamp

3) Auto Black Balance (ABB)

This circuit corrects the camera's RGB signal to correct black level when the iris is closed. When the ABB is activated, the DSP reads digitized RGB signal and the block data detect calculates the average values.
The camera microprocessor reads the average values from the block data detect circuit and calculates the average between R, G and B signals. The calculated block are then compared the reference level which is stored in the E-PROM. The error (level difference) is fed back to the D/A converter, and ABB corrects the black level by changing the gain of RGB signal as shown in Figure C25.

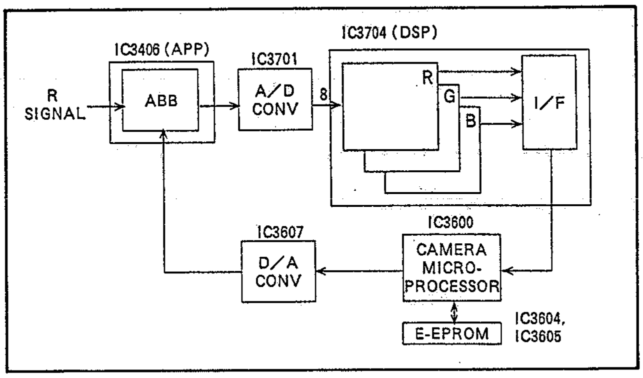

IC3704 (DSP)
IC3406 (APP)
IC3701
R SIGNAL
ABB
A/D CONV
8
R
G
B
I/F
IC3607
D/A CONV
IC3600
CAMERA MICRO-PROCESSOR
E-EPROM
IC3604, IC3605

Figure C25 Auto Black Balance Block Diagram

4) Auto White Balance (AWB)

This circuit compensates the white balance (purity) of the camera's RGB signals in difference color temperature. When a white image is shot, the AWB automatically adjusts the balance of the camera's signals to correctly reproduce white.

There are two type of AWB to choose from preset mode or user selected mode. The preset mode automatically corrects the white balance in 3200K condition. In the user selected mode, the AWB corrects the white balance in any color temperature (indoor or outdoor light) by using the block data detect circuit and dark shading correction. The circuit operation is explained below.

When the camera is focused on the white object and the AWB is pressed, the DSP reads the digitized RGB signal and the block data detect calculates the an average values. The camera microprocessor reads the average values and then selects the maximum level. The microprocessor then compares the maximum R and B values to the maximum G level and recalculates R and B values.
The error values are then sent to the D/A converter so that RGB gain is changed so the levels are balanced to reproduce white as shown in Figure C26.

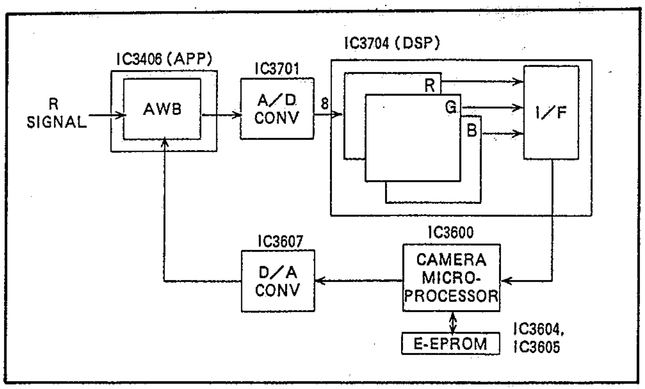

IC3704 (DSP)
IC3406 (APP)
IC3701
R SIGNAL
AWB
A/D CONV
8
R
G
B
I/F
IC3607
D/A CONV
IC3600
CAMERA MICRO-PROCESSOR
E-EPROM
IC3604, IC3605

Figure C26 Auto White Balance Block Diagram

5) Pre-Knee and Gamma Correction

The high level detail portion of the luminance signal is lost when the input signal is higher than specification and white clipped. The pre-knee circuit prevents this loss by compressing the high level portion to 128% as shown in Figure C27.

This circuit works in conjunction with the gamma circuit. The pre-knee angle varies with the input level, The AG-DP800's input dynamic range is 400% while the gamma level is set to 0.45.

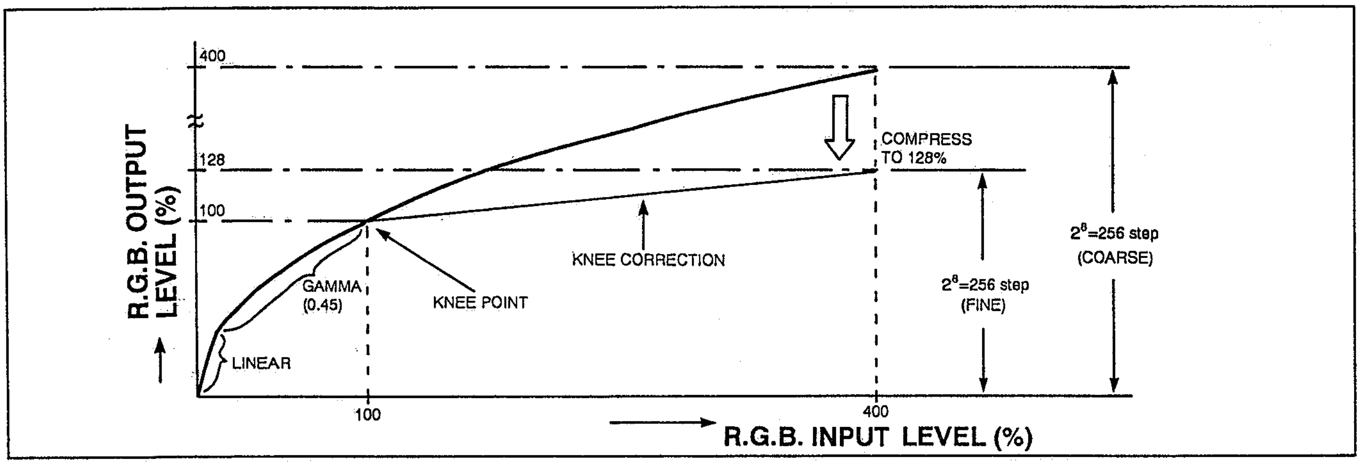


Figure C27 Characteristics of Pre-Knee & Gamma Correction Circuit

6) Automatic Iris Control (ALC)

When the camera turned on, the AGC is set to 0dB prior to auto iris control. As the iris slowly opens, the CCD produce an image in proportion to the incoming light intensity. The output is fed to the DSP circuit via pre-amplifier and analogue pre-process circuit. The DSP reads the digital G signal level, and the block data detect of DSP calculates an average value. (see dark shading correction for block data detect explanation).
The camera's microprocessor reads the average value and selects the one with the maximum value. Next the microprocessor compares that selected block to a preset value that is stored in the E-PROM. If the selected block value is smaller in comparison to the preset value, the iris opened.
But if the selected block value is larger than the preset, the iris closes step by until both values are equal. When the camera is used in low level conditions, the iris is fully opened, in an attempt to keep the signal level constant. The AGC is then used adjust its gain to maintain levels.

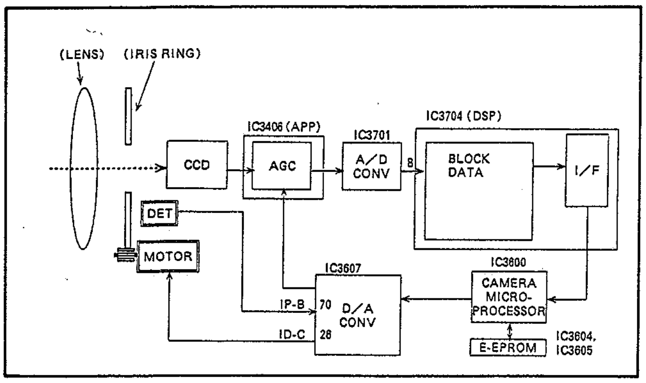


Figure C28 Automatic Iris Control

1-6. DIGITAL SIGNAL PROCESS (DSP) CIRCUIT

A digital signal processing chip (MN6734) is used, and all the signal processing is done digitally. The RGB signals coming from the analog pre-process circuit are A/D converted to an 8-bit digital data, and the converted signals are then digitally processed by the digital signal process circuit (DSP). The overall block diagram of DSP is shown in Figure C29.

The DSP circuit consists of twelve sections as follows.

1. Y Matrix
2. Auto Knee Correction
3. Noise Cancel
4. Y Output
5. V-DTL (Vertical Aperture Correction)
6. H-DTL (Horizontal Aperture Correction)
7. Coring Limiter
8. Chroma Phase Compensator
9. Chroma Low Pass Filter
10. Chroma DTL (Chroma Aperture Correction)
11. Masking
12. Color Bar Generator

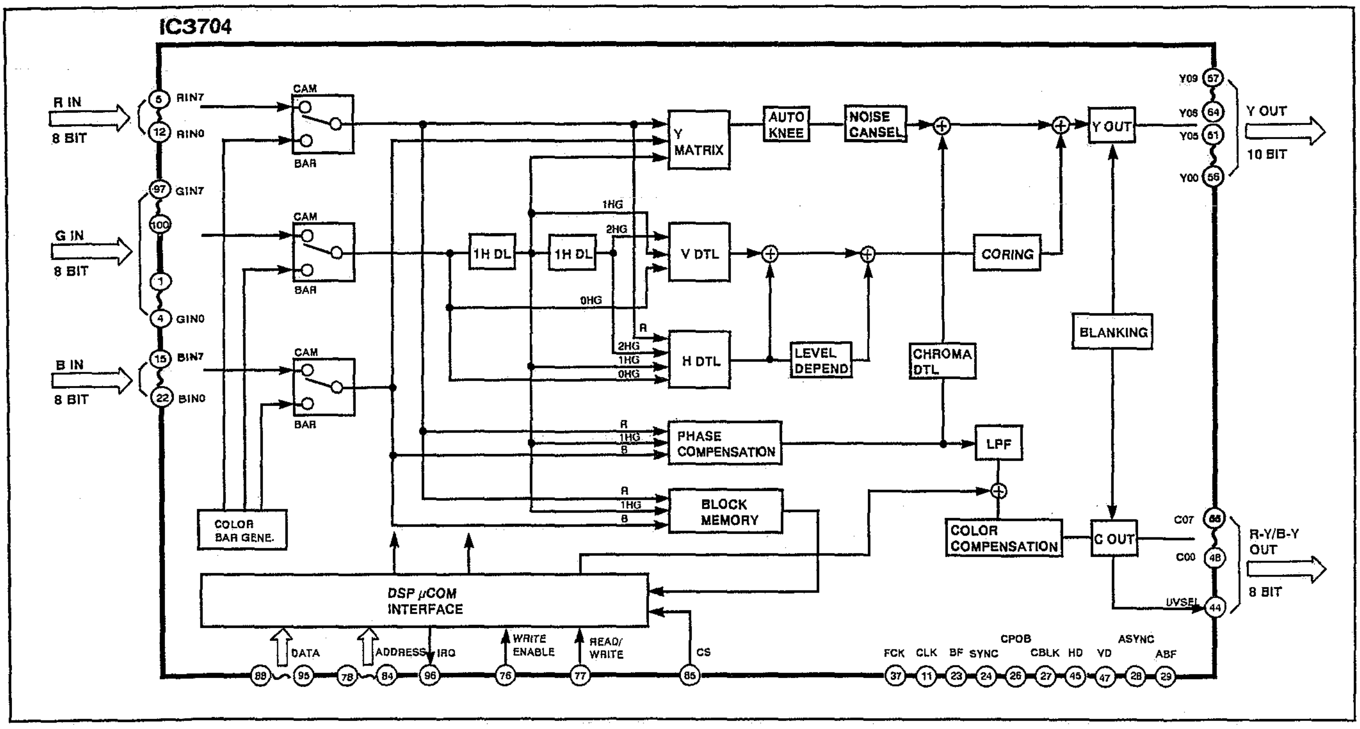

IC3704
R IN
8 BIT
5 RIN7
12 RIN0
97 GIN7
100
G IN
8 BIT
1
4 GIN0
B IN
8 BIT
15 BIN7
22 BIN0
CAM
BAR
COLOR BAR GENE.
1H DL
1H DL
1HG
2HG
0HG
R
B
Y MATRIX
V DTL
H DTL
PHASE COMPENSATION
BLOCK MEMORY
AUTO KNEE
NOISE CANSEL
LEVEL DEPEND
CHROMA DTL
CORING
BLANKING
Y OUT
LPF
COLOR COMPENSATION
C OUT
Y09 57
Y06 64
Y05 61
Y00 56
Y OUT
10 BIT
C07 66
C00 48
UVSEL 44
R-Y/B-Y OUT
8 BIT
DSP μCOM INTERFACE
DATA
ADDRESS
IRQ
WRITE ENABLE
READ/ WRITE
CS
88 95 78 84 96 76 77 85
FCK CLK BF SYNC CPOB CBLK HD VD ASYNC ABF
37 11 23 24 26 27 45 47 28 29

Figure C29 Overall Block Diagram of DSP IC

1) Y Matrix

The G signal is half pitch delayed to compensate for the spatial offset of the CCD. The half pitch offset is one cycle of 13.5MHz. The G signal is always 1H delayed because of further V-DTL correction as shown in Figure C30, also Figure C30 shows how RGB signals are mixed to make the Y signal.

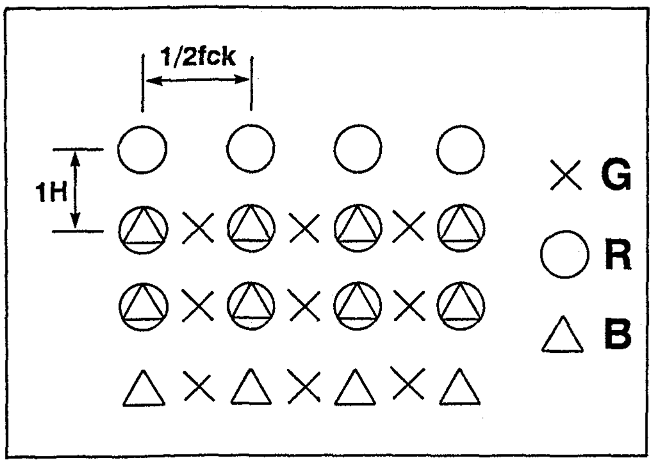

1/2fck
1H
× G
○ R
△ B

Figure C30 Pixel Layout

2) Auto Knee Correction

The Figure C31 shows the characteristic curve of the auto knee circuit. As previously explained the knee circuit compresses the high level signal portion to maintain picture detail in high level (over specification) input signals. Gamma correction is also applied in this processing stage.

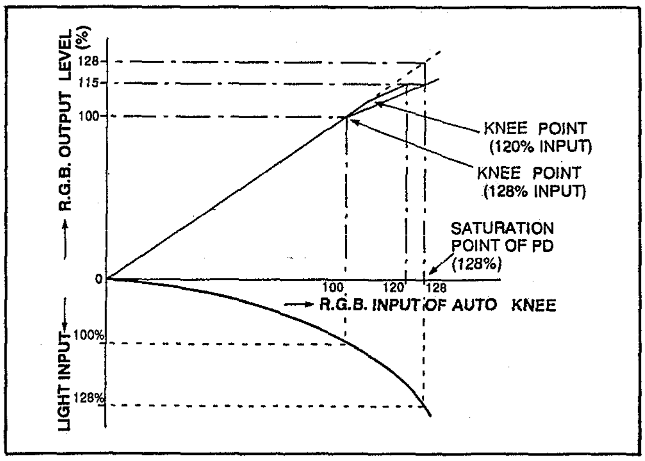


Figure C31 Input / Output Characteristics of Auto Knee Correction

3) Noise Cancel

This circuit eliminates high frequency amplifier noise. Figure C32 shows the circuit to have low and high pass filter and Limiter. The Y input signal follows two path, one path goes to the low pass filter and allows only the Y signal pass.
In the other path, the Y input signal goes to high pass filter, extracting the high frequency noise component. This circuit improves the signal to noise ratio of the Y signal.

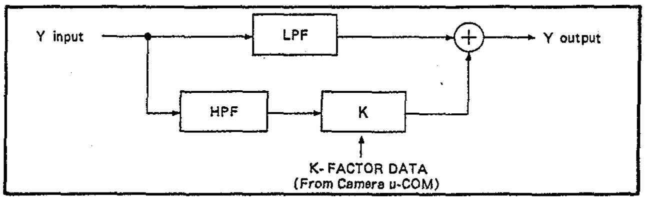

Y input
LPF
Y output
HPF
K
K-FACTOR DATA
(From Camera u-COM)

Figure C32 Noise Cancel

4) Y Output

In this circuit, the following adjustments are made.

a. Output gain adjustment
b. Set-up level adjustment
c. Upper and lower clipping
d. Blanking signal mixing

5) V-DTL (Vertical Aperture Correction)

This circuit enhances the image contours give the picture clearer details. This circuit consists of two delay lines and adding circuits. The detail signal is extracted from the G signal. The non delay G signal called 0H is directly fed to the adding circuit. A 1H and 2H delayed G signal is produced from the two 1H delay lines.

The vertical detail signal is made from the combination of the 0H, 1H and 2H delayed G signals. As shown in Figure D5, the 2H delayed signal is added to the 0H delayed signal (0H+2H/2) and 1H minus the latter signal (0H+2H/2) is combined to Y signal to produce the V-DTL signal. The V-DTL level can be set in the user's scene file menu. See Figure C33.

6) H-DTL (Horizontal Aperture Correction)

This circuit is identical to the V-DTL circuit, with only slight differences, only those difference will be explained here. Figure D6 shows the H-DTL circuit generates the horizontal G detail signal in the same manner as V-DTL circuit. But then the R signal is added to the G signal and the added signals are passed thru both high and low frequency band pass filter to cancel chroma crosswalk.

Afterwards both the H and V DTL signals are added then, mixed with the Y signal making the horizontal detail clearer. The levels for this circuit are accessible from the user's scene file. Then it is added to the R signal and obtains the H detail signal from both the G and R signals. This is because of avoiding the cross color effects.

After that, the H detail signal is added to the V detail signal. Finally the H/V detail signal are mixed with the 1H delayed G signal and makes the H/V detail clearer. The H detail level and its frequency can be preset using the user scene file menu. See Figure C33.

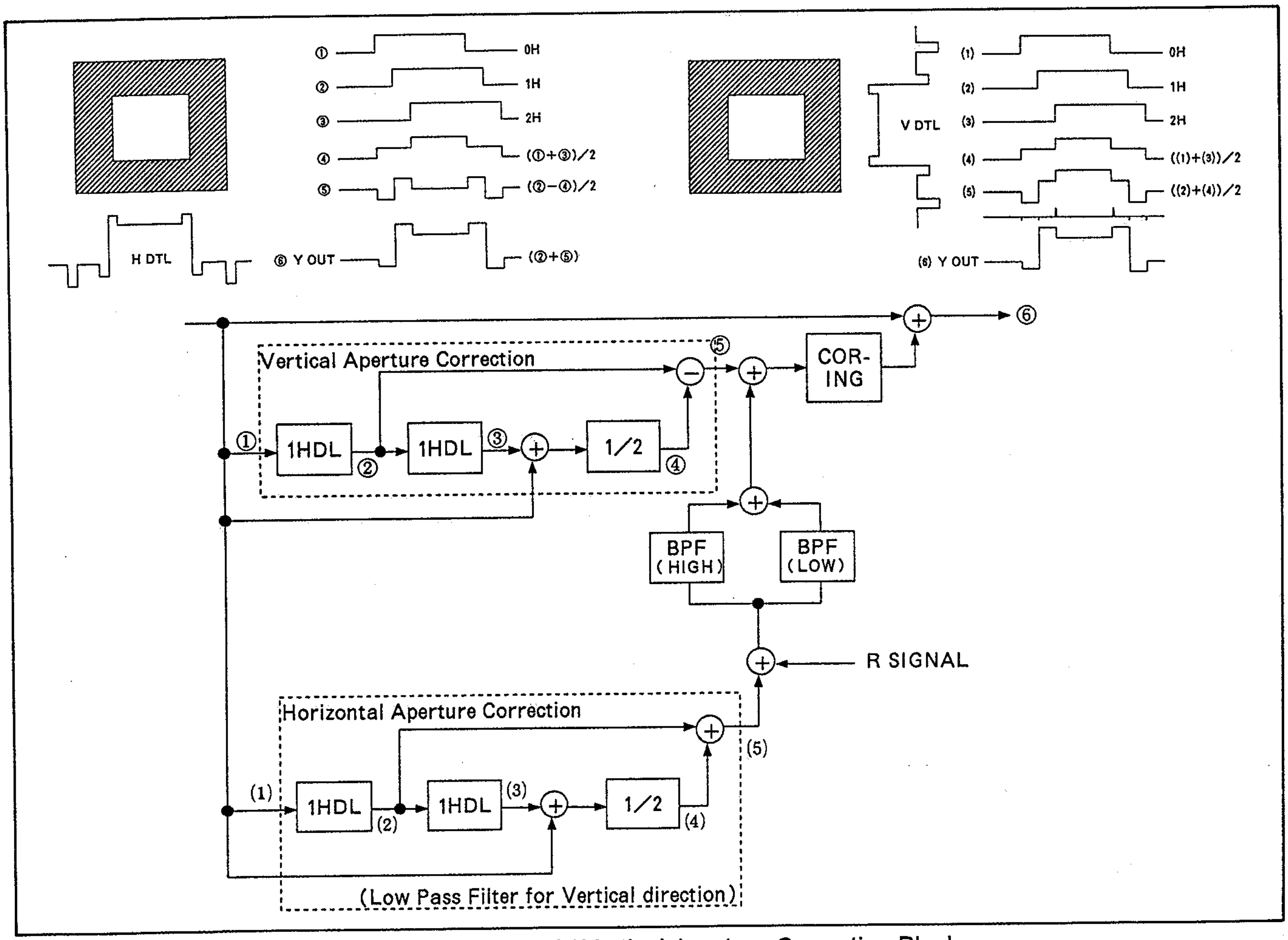

① 0H
② 1H
③ 2H
④ (①+③)/2
⑤ (②−④)/2
H DTL
⑥ Y OUT (②+⑤)
(1) 0H
(2) 1H
(3) 2H
(4) ((1)+(3))/2
(5) ((2)+(4))/2
V DTL
(6) Y OUT
⑥
Vertical Aperture Correction
①
1HDL
②
1HDL
③
1/2
④
⑤
COR-ING
BPF (HIGH)
BPF (LOW)
R SIGNAL
Horizontal Aperture Correction
(1)
1HDL
(2)
1HDL
(3)
1/2
(4)
(5)
(Low Pass Filter for Vertical direction)

Figure C33 Vertical / Vertical Aperture Correction Block

7) Coring Limiter

The H and V detail signals go from the detail circuit to coring circuit, this is where the signal noise component is removed.
Figure C34 shows the coring waveforms for the signal input and output level. The level for this circuit are available from user scene file.

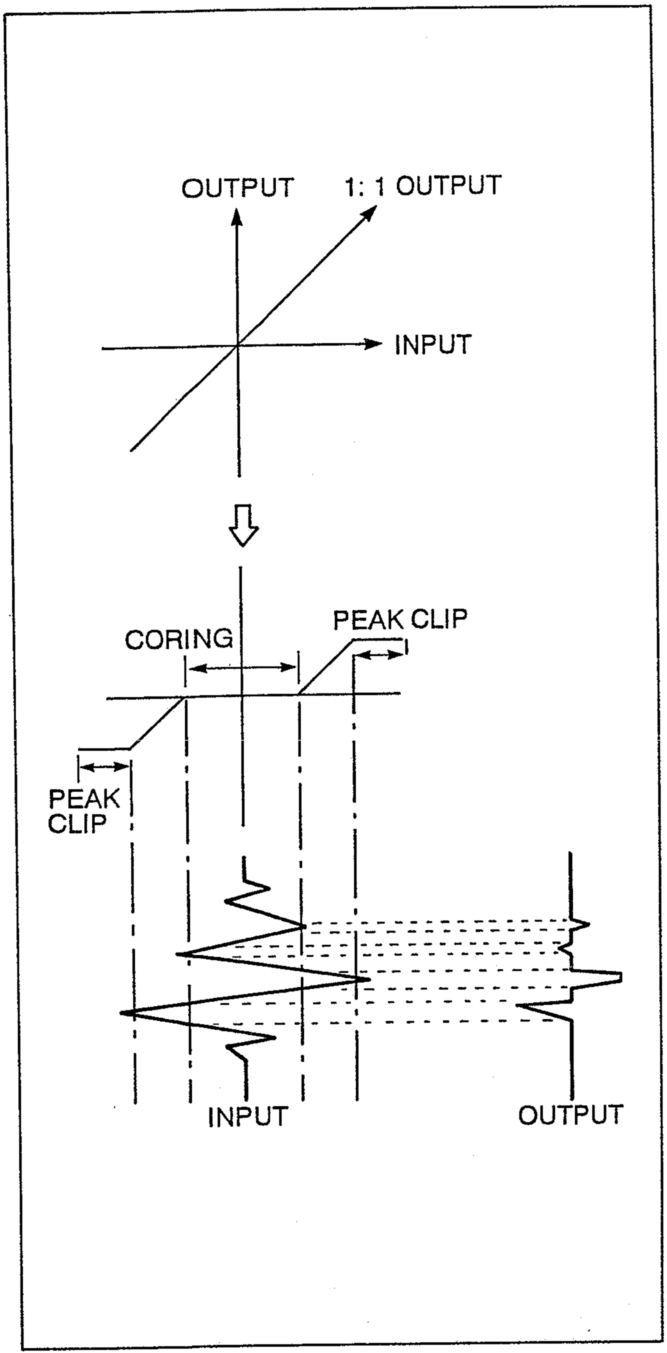


Figure C34 Characteristics of Coring Limiter Circuit

8) Chroma Phase Compensator

The purpose of this circuit is to match the timing phase of RGB signals when the color difference signals (R-Y and B-Y) are produced. The Compensator adjusts the R and B phase according to the G signal.

9) Chroma Low Pass Filter

During chroma encoding, this circuit prevents Nyquist reflection by reducing the 3.58Mhz components.

10) Chroma DTL (Aperture)

When shooting a scene and the image contains mostly red or blue information, this circuit boosts the available luminance signal so high resolution image detail in maintained.

11) Masking

The masking circuit is a matrix enabling the camera to be set up and to compensate for the colorimeter of the scene caused by lighting conditions and different types of camera. The R-Y and B-Y signals under goes the chroma phase Compensator, are sent to the masking circuit. There are four coefficient data, a, b, c, d that generated on the camera microprocessor and are multiplied to the R-G and B-Y signals in the following formulas.

R-Y = a (R-G) + b (B-G)
B-Y = c (R-G) + d (B-G)

These coefficient data can be level set on the matrix to match the camera output in a Multi-camera studio.

12) Color Bar Generator

IC3704 is equipped with a color bar generator and it generates the color bar for industrial use. The output of color bar signal can be selected using the output selector switch.

1-7. Encoder Circuit

The encoder circuit is located on the DSP board. After the D/A converters (IC3705, IC3706), the Y, R-Y and B-Y signals are sent to the encoder so a composite signal can be produce at the video output and 26 pin connectors.

The encoder circuit consists of IC3203. The R-Y and B-Y signals are supplied to the balance modulators. The R-Y signal is modulated with a 90 degrees phase shift while the B-Y signal is modulated with a 180 degrees phase shift then both signals are mixed. The combination of the burst flag and the sub-carrier produces the burst signal, and mixed with the mixed chroma signal.

Finally, the combination of the Y signal and chroma signal is produces the composite video signal as shown in Figure C35.

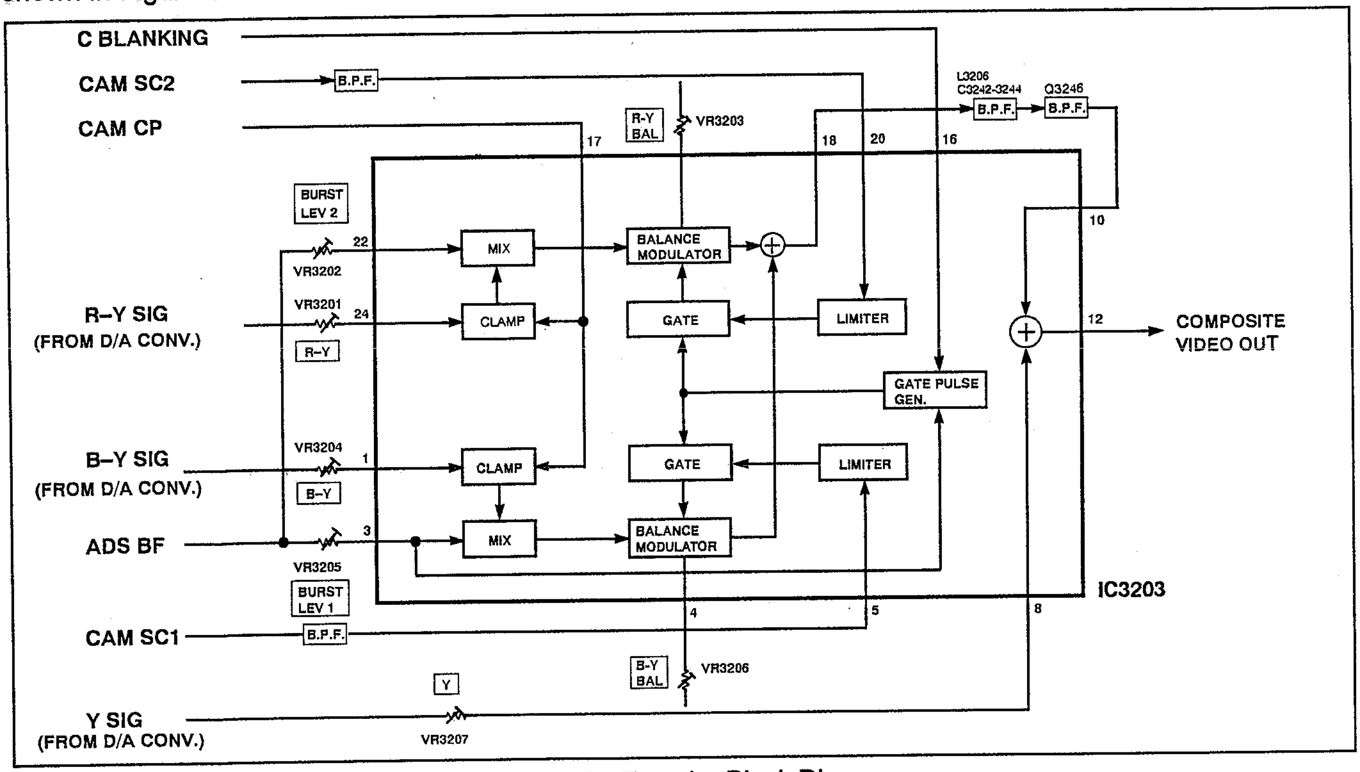

C BLANKING
CAM SC2
CAM CP
B.P.F.
R-Y BAL
VR3203
17
18
20
16
L3206
C3242-3244
Q3246
B.P.F.
B.P.F.
BURST LEV 2
22
VR3202
MIX
BALANCE MODULATOR
10
R-Y SIG
(FROM D/A CONV.)
VR3201
24
R-Y
CLAMP
GATE
LIMITER
12
COMPOSITE VIDEO OUT
GATE PULSE GEN.
B-Y SIG
(FROM D/A CONV.)
VR3204
1
B-Y
CLAMP
GATE
LIMITER
ADS BF
3
MIX
BALANCE MODULATOR
VR3205
BURST LEV 1
IC3203
CAM SC1
B.P.F.
4
5
8
Y
B-Y BAL
VR3206
Y SIG
(FROM D/A CONV.)
VR3207

Figure C35 Encoder Block Diagram

1-8. SYNC GENERATOR CIRCUIT

The sync generator provides V and H drive signal and burst which is synchronized to the incoming genlock signal. If no input reference signal is detected, the internal oscillator (X3003) generates these signals. Figure C36 shows the simplified block diagram for this circuit.

1) Sync and Burst Separator

When the reference signal is supplied to the genlock connector, the sync separator (IC3001) removes the H sync and supplies that signal to the burst flag generator (IC3003). Then the burst separator (IC3002,IC3006) removes the burst signal from the reference and is sent to the sync generator IC as a reference

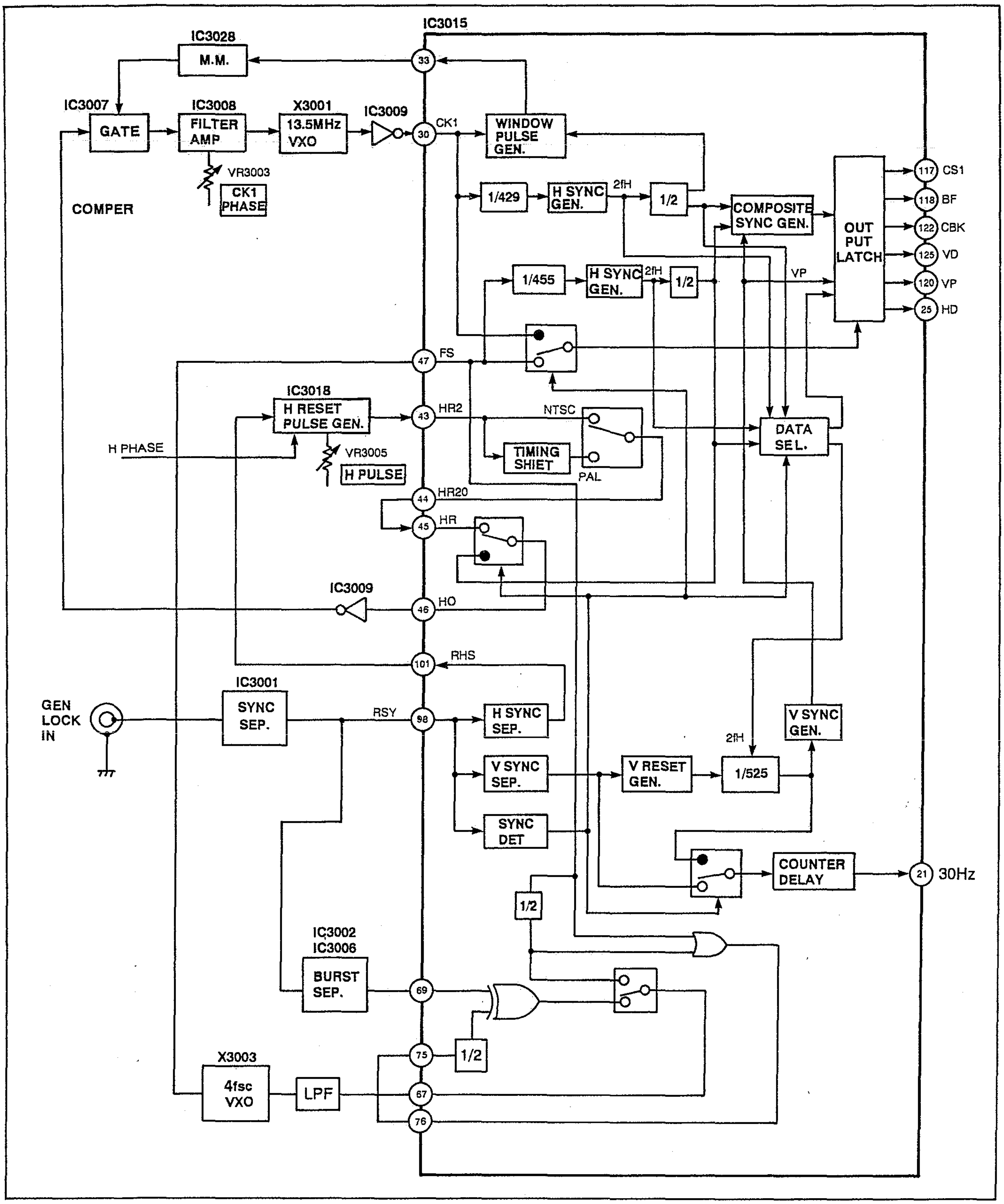

IC3015
IC3028
M.M.
33
IC3007
GATE
IC3008
FILTER AMP
X3001
13.5MHz VXO
IC3009
30
CK1
WINDOW PULSE GEN.
VR3003
CK1 PHASE
COMPER
1/429
H SYNC GEN.
2fH
1/2
COMPOSITE SYNC GEN.
OUT PUT LATCH
117
CS1
118
BF
122
CBK
125
VD
120
VP
25
HD
1/455
H SYNC GEN.
2fH
1/2
VP
47
FS
IC3018
H RESET PULSE GEN.
43
HR2
NTSC
TIMING SHIET
PAL
DATA SEL.
H PHASE
VR3005
H PULSE
44
HR20
45
HR
IC3009
46
HO
101
RHS
IC3001
SYNC SEP.
GEN LOCK IN
RSY
98
H SYNC SEP.
V SYNC SEP.
SYNC DET
V RESET GEN.
1/525
2fH
V SYNC GEN.
COUNTER DELAY
21
30Hz
1/2
IC3002
IC3006
BURST SEP.
69
75
1/2
X3003
4fsc VXO
LPF
67
76

Figure C36 Block Diagram of Sync Generator Circuit

2) Sync Generator PLL

NTSC model

Within the phase lock loop (PLL) X3003 generates a 4fsc signal that is locked to incoming reference signal. If no signal is present, the PLL circuit is in free run. The VD and HD signals are generated based on the 4fsc sub-carrier.

PAL model

The PAL system does not generate an HD signal by division of the 4fsc signal because of 25Hz offset (fsc = 284fH - 1/4fH + 1/265fH), but uses the 13.5MHz VCO (X3001) to generate the HD signal.

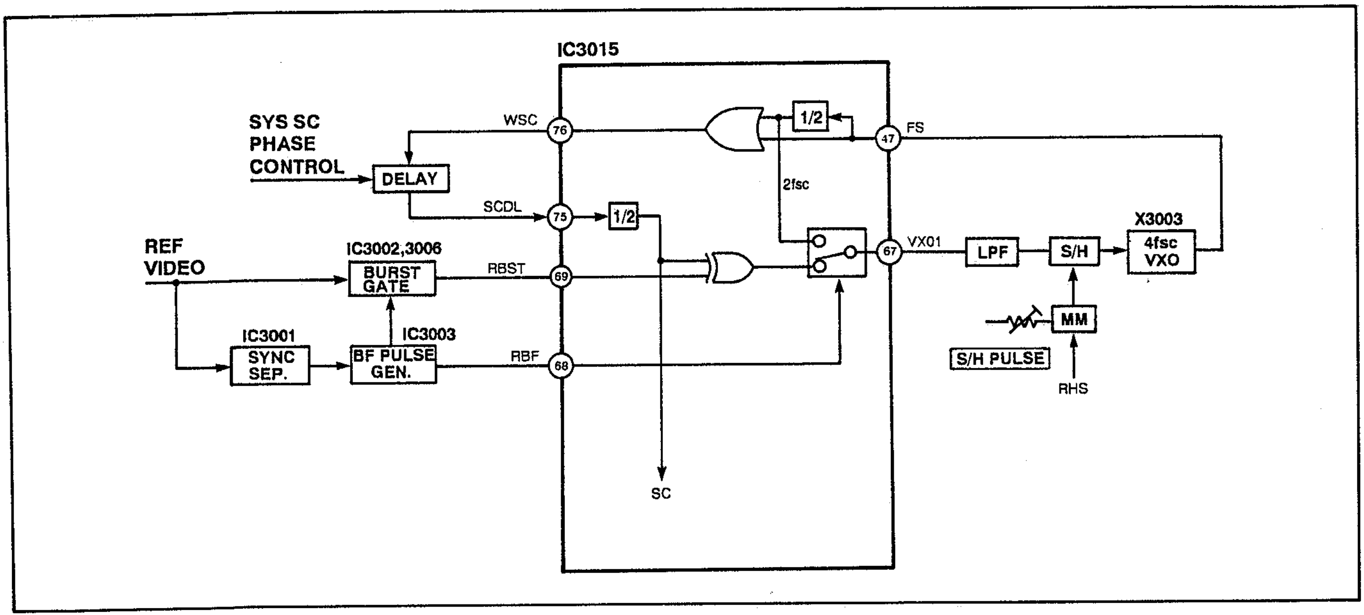

IC3015
SYS SC PHASE CONTROL
DELAY
WSC
76
1/2
47
FS
2fsc
SCDL
75
1/2
REF VIDEO
IC3002,3006
BURST GATE
RBST
69
67
VX01
LPF
S/H
X3003
4fsc VXO
MM
S/H PULSE
RHS
IC3001
SYNC SEP.
IC3003
BF PULSE GEN.
RBF
68
SC

Figure C37 Sync Generator

3) Sub-carrier Generator

X3002 is a 4fsc VCO that generates the sub-carrier. The sub-carrier phase can be adjusted by system SC phase potentiometer on the side panel. This adjustment is necessary to compensate sub-carrier timing difference, caused by cable delay if the camera is to be timed within a system.

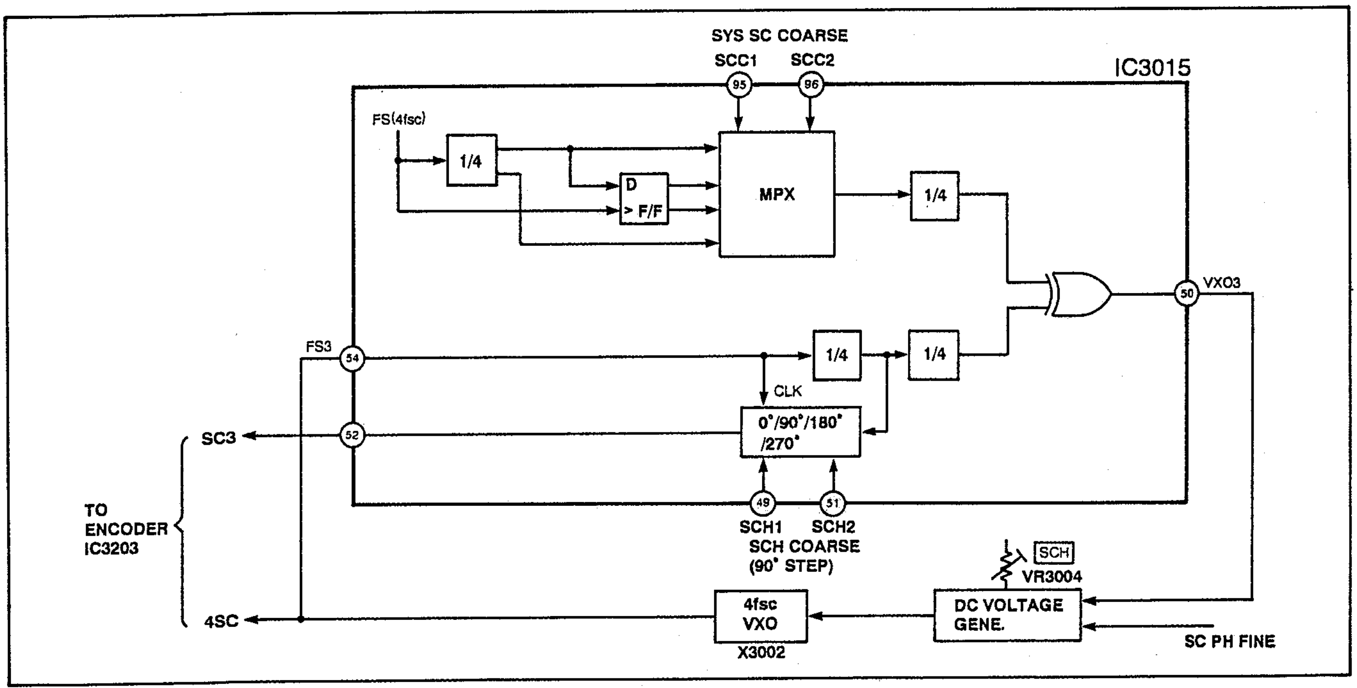

SYS SC COARSE
SCC1
SCC2
95
96
IC3015
FS(4fsc)
1/4
D
> F/F
MPX
1/4
50
VXO3
FS3
54
1/4
1/4
CLK
0°/90°/180° /270°
SC3
52
TO ENCODER IC3203
49
51
SCH1
SCH2
SCH COARSE (90° STEP)
SCH
VR3004
4SC
4fsc VXO
X3002
DC VOLTAGE GENE.
SC PH FINE

Figure C38 Subcarrier Generator

2. VIDEO CIRCUIT

[General Description]

1) Luminance Circuit

The video circuit consists of luminance and chrominance circuits. The luminance circuit converts the Y signal (sent from the camera block) to FM signal in order to compress the frequency range. The unit employs the S-VHS system to provide higher picture quality, which is achieved by rising the FM carrier frequency of luminance signal. (3.5 MHz - 4.5 MHz to 5.4 MHz - 7.0 MHz (NTSC) / 3.8 MHz - 4.8 MHz to 5.4 MHz - 7.0 MHz (PAL)). See Figure V1.

As a result, the S-VHS system offers well over 400 lines of horizontal resolution, as oppose to normal VHS, which is only about 240 lines (PAL 250 lines). Due to the higher carrier shift of S-VHS, some circuits such as sub-emphasis, must have different characteristics from the VHS system. These circuits must be therefor be switchable depending on the S-VHS or VHS mode.

2) Chrominance Circuit

The chrominance circuit modulates the R-Y and B-Y signals sent from the camera block to 3.58 MHz (NTSC)/ 4.43 MHz (PAL). Then this chrominance signal is converted to a low frequency 629 KHz (NTSC) / 627 KHz (PAL) with phase rotation, in order to cancel out crosswalk from adjacent tracks. See Figure V1.

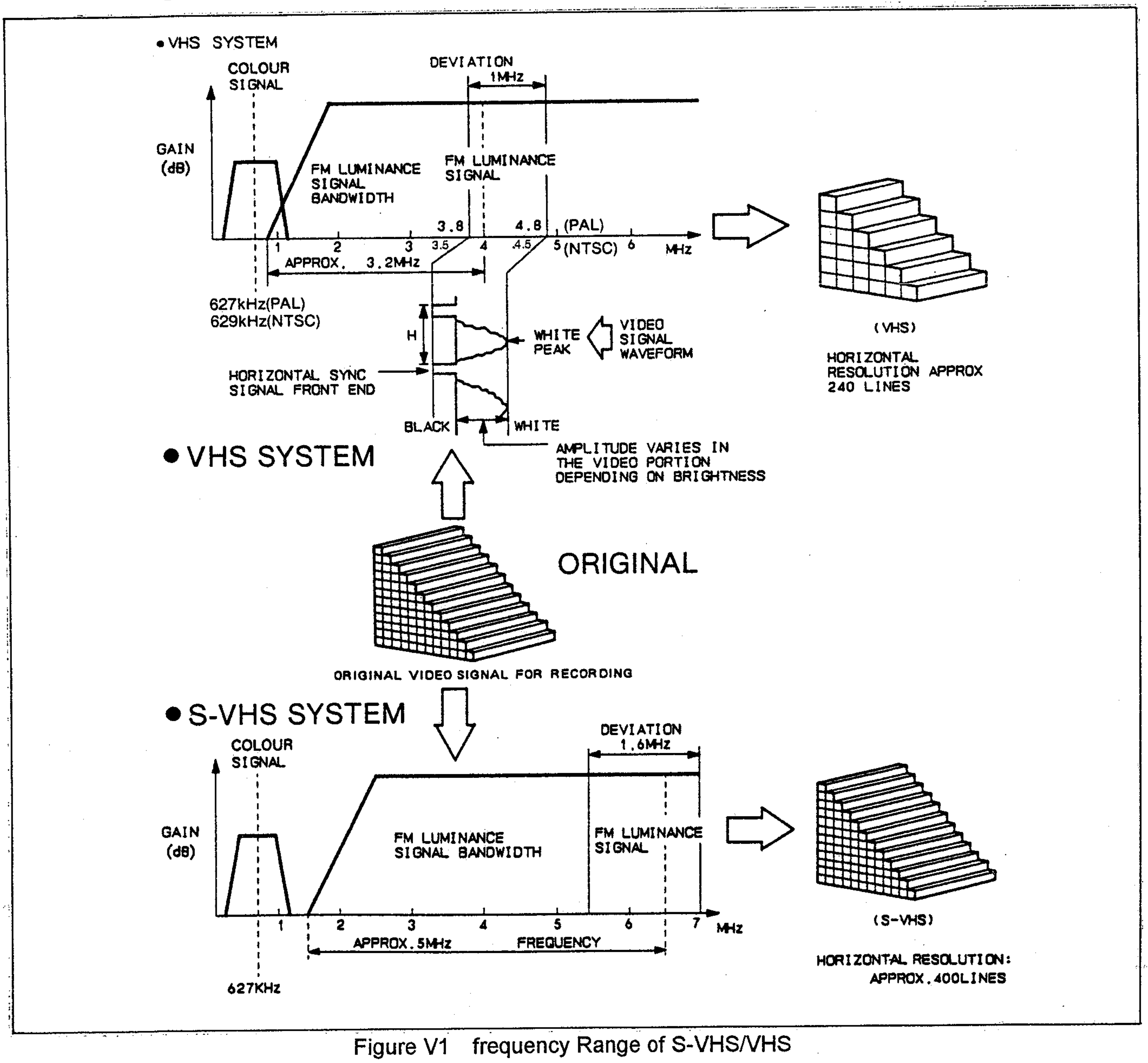

• VHS SYSTEM
COLOUR SIGNAL
DEVIATION
1MHz
GAIN (dB)
FM LUMINANCE SIGNAL BANDWIDTH
FM LUMINANCE SIGNAL
3.8
4.8
(PAL)
1
2
3
3.5
4
4.5
5 (NTSC)
6
MHz
APPROX. 3.2MHz
627kHz(PAL)
629kHz(NTSC)
H
WHITE PEAK
VIDEO SIGNAL WAVEFORM
HORIZONTAL SYNC SIGNAL FRONT END
BLACK
WHITE
AMPLITUDE VARIES IN THE VIDEO PORTION DEPENDING ON BRIGHTNESS
(VHS)
HORIZONTAL RESOLUTION APPROX 240 LINES
• VHS SYSTEM
ORIGINAL
ORIGINAL VIDEO SIGNAL FOR RECORDING
• S-VHS SYSTEM
COLOUR SIGNAL
DEVIATION
1.6MHz
GAIN (dB)
FM LUMINANCE SIGNAL BANDWIDTH
FM LUMINANCE SIGNAL
1
2
3
4
5
6
7
MHz
APPROX.5MHz
FREQUENCY
627KHz
(S-VHS)
HORIZONTAL RESOLUTION: APPROX.400LINES

Figure V1 frequency Range of S-VHS/VHS

2-1. Luminance Circuit Operation

Figure V2. shows a block diagram of the luminance circuit. the IC3001 incorporates all luminance operations within 1 chip.
Each circuits operation is as follow;

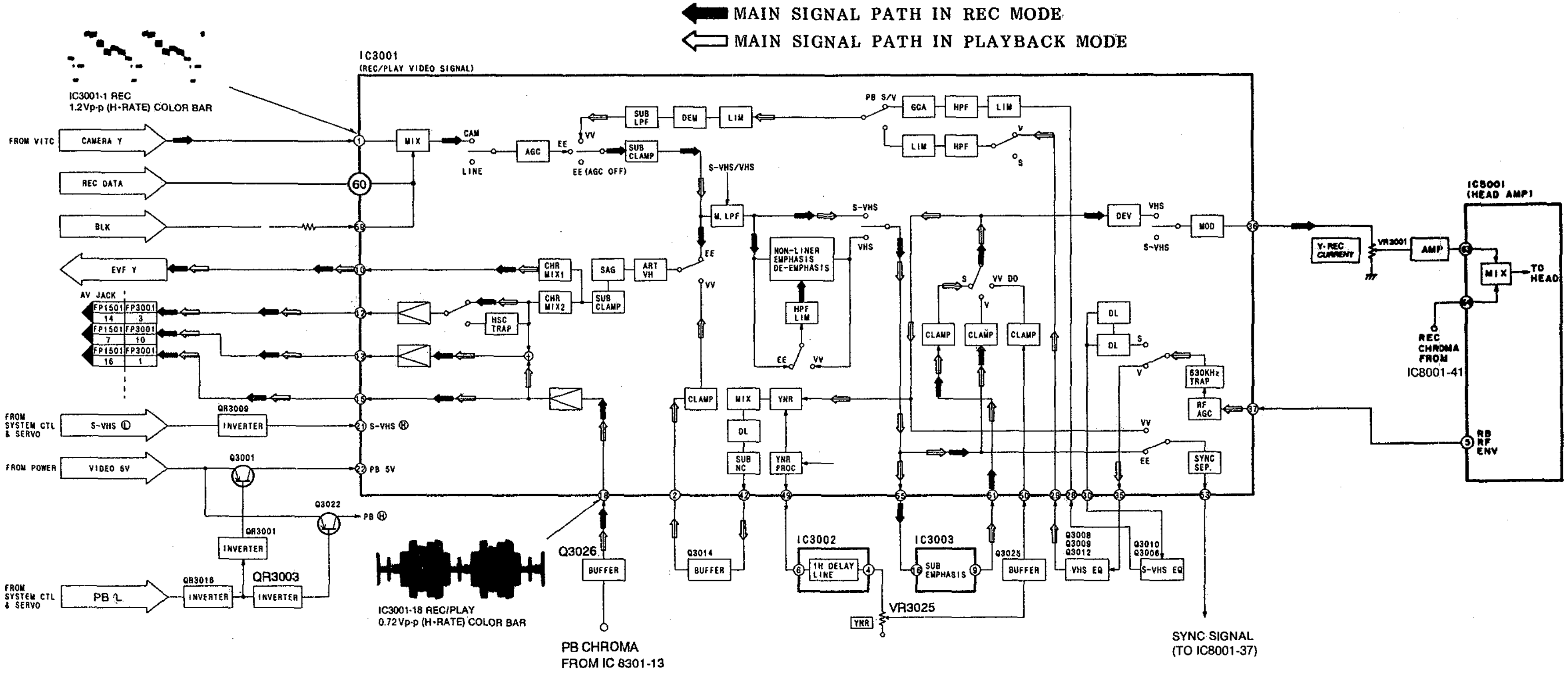

MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
IC3001-1 REC
1.2Vp-p (H-RATE) COLOR BAR
IC3001
(REC/PLAY VIDEO SIGNAL)
FROM VITC
CAMERA Y
REC DATA
BLK
EVF Y
AV JACK
FP1501 FP3001 14 3
FP1501 FP3001 7 10
FP1501 FP3001 16 1
FROM SYSTEM CTL & SERVO
S-VHS
FROM POWER
VIDEO 5V
PB
QR3009 INVERTER
Q3001
QR3001 INVERTER
Q3022
QR3016 INVERTER
QR3003 INVERTER
S-VHS
PB 5V
PB
MIX
CAM
LINE
AGC
EE
EE (AGC OFF)
SUB CLAMP
VV
SUB LPF
DEM
LIM
PB S/V
GCA
HPF
LIM
V
S
S-VHS/VHS
M. LPF
S-VHS
VHS
NON-LINER EMPHASIS DE-EMPHASIS
HPF LIM
EE
VV
CHR MIX1
CHR MIX2
SAG
ART VH
SUB CLAMP
HSC TRAP
CLAMP
MIX
YNR
DL
SUB NC
YNR PROC
CLAMP
CLAMP
CLAMP
VV DO
DEV
VHS
S-VHS
MOD
DL
DL
630KHz TRAP
RF AGC
SYNC SEP.
IC3001-18 REC/PLAY
0.72Vp-p (H-RATE) COLOR BAR
Q3026
BUFFER
PB CHROMA
FROM IC 8301-13
Q3014
BUFFER
IC3002
1H DELAY LINE
IC3003
SUB EMPHASIS
VR3025
YNR
Q3025
BUFFER
Q3008
Q3009
Q3012
VHS EQ
Q3010
Q3006
S-VHS EQ
SYNC SIGNAL
(TO IC8001-37)
Y-REC CURRENT
VR3001
AMP
IC8001
(HEAD AMP)
MIX
TO HEAD
REC CHROMA FROM
IC8001-41
RB RF ENV

Figure V2 Block Diagram of Luminance Circuit

1) Character Mix Circuit

The incoming luminance signal (Y) is supplied to pin 1 of IC3001 and mixed with character (REC DATA) which is sent from OSD microprocessor IC6503.

2) AGC (Auto Gain Control)

AGC maintains the incoming signal level by monitoring the sync and peak levels of the signal and not allowing them to exceed the saturation point and cause over-modulation.

3) Clamp Circuit

Clamp circuit stabilizes the DC components of the sync level by not allowing the sync tip frequency to fluctuate after FM modulation.

4) LPF (Low Pass Filter)

This filter removes the high frequency noise in the incoming signal. The frequency range of filter changes depending on the S-VHS or VHS mode.

S-VHS: 5 MHz (NTSC/PAL)
VHS: 3 MHz (NTSC) / 4 MHz (PAL)

5) S-VHS/VHS Selection

IC3001-21 switches the S-VHS/VHS switch in IC3001, which is sent from IC6501 and is inverted by QR3009.

S-VHS mode: IC3001 - 21 (H)
VHS mode: IC3001 - 21 (L)

In recording mode, the microprocessor detects the S-VHS/VHS mode by using a mechanical switch (for tape detection) and user key operation. In playback mode, detection is done automatically by IC3001 monitoring the recorded frequency.

6) Non-linear Emphasis Circuit

This circuit used only for the VHS mode, boosts the level of higher frequency components to improve the S/N ration. The circuit boosts the lower level signal more than the higher level signal.
The characteristics of non-linear emphasis are shown in Figure V3.

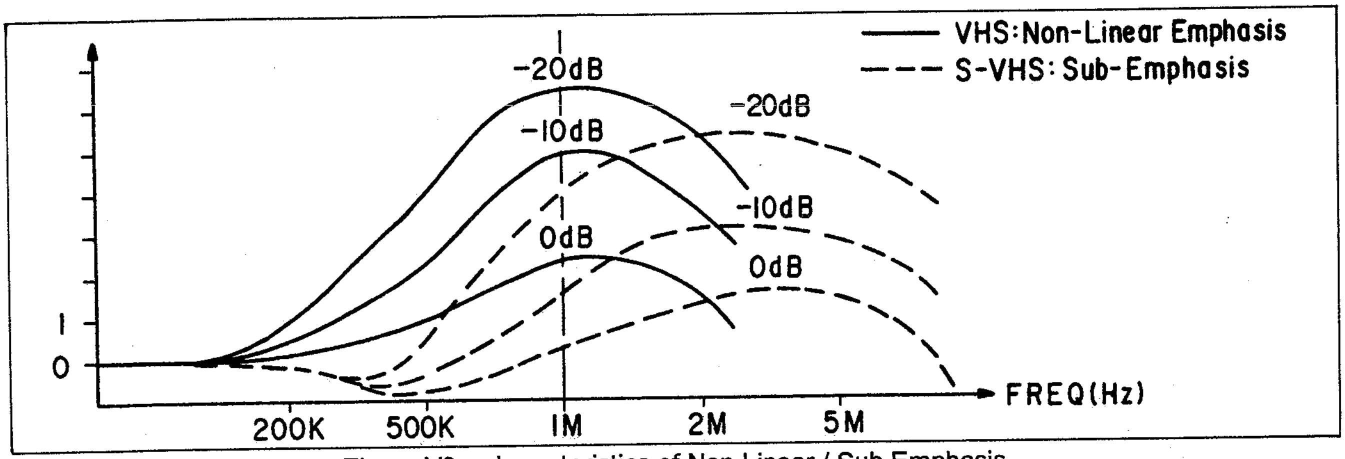


Figure V3 characteristics of Non-Linear / Sub Emphasis

7) Sub-Emphasis Circuit

This circuit is used for S-VHS mode. This circuits purpose is the same as that of the non-linear emphasis circuit, however, the frequency response is higher because the frequency of the incoming signal is higher than VHS.
This circuit also attenuate the low band and large input signal so as to prevent signal loss of edge portion in the white clip circuit.

8) Main Emphasis Circuit

This circuit again boosts the higher frequency signal, regardless of the level of the incoming signal, so as to improve the S/N ratio.

9) Deviation Circuit

This circuit restricts the level (peak to peak) of the incoming signal which is then modulated to an FM signal. This circuit adjusts the peak level and range of signal, depending on the S-VHS or VHS mode. Wider peak-to-peak signal have wider frequency deviation after frequency modulation.

10) FM MOD (Frequency Modulation)

This circuit modulates the incoming signal to an FM signal. The higher level is modulated to a higher frequency.

S-VHS: 5.4 MHz - &.0 MHz (PAL/NTSC)
VHS: 3.8 MHz - 4.8 MHz (PAL)
3.5 MHz - 4.5 MHz (NTSC)

11) Y REC Current Adjustment

Adjusts the recording current to prevent excess current from saturating the signal.

12) Head Amplifier

Head amplifier IC5001 mixes the luminance signal (IC5001 -63) with the chrominance signal (IC5001-64), amplifier it, and sends it to the rotary video heads for recording. Due to the small cylinder diameter, four head switching is performed in this IC.

13) Four Head Switching (CTSW: Cross Talk Switching)

<Outline>

a. The diameter and tape wrapping angle is different from conventional tabletop cylinders. (See Figure V4.).

b. In order to have compatibility, the cylinder unit has 4 video heads for recording and playback. Three heads are always in contact with the tape. (A conventional cylinder has 2 heads, with only one head always in contact with the tape.)

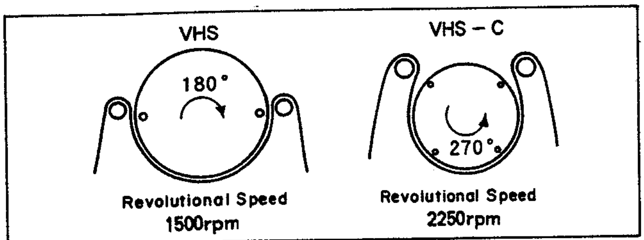

VHS
VHS – C
180°
270°
Revolutional Speed
1500rpm
Revolutional Speed
2250rpm

Figure V4 Comparison Table VTR and VHS movie

c. Therefor, recording current is not supplied to the head all the time, as in conventional systems.

d. The recording current is switched and supplied to the effective head for recording, which is performed by CTSW1 to CTSW4. Also in the playback mode, the effective head is selected by CTSW1 to CTSW4. (See Figure V5).

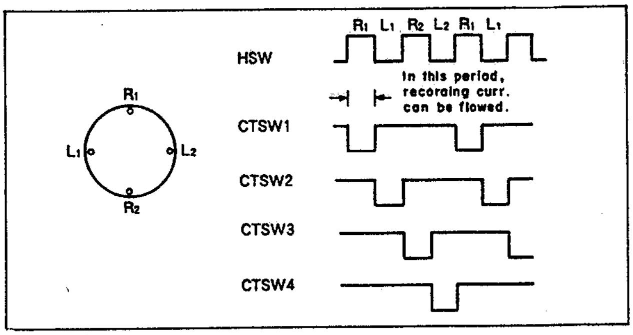

R1 L1 R2 L2 R1 L1
HSW
In this period, recording curr. can be flowed.
R1
L1
L2
R2
CTSW1
CTSW2
CTSW3
CTSW4

Figure V5 Relation between Head Switching Pulse and CTSW

<Operation>

a. The H.SW, H.A.SW and VORP (Video Overlap) pulses (which are sent from servo IC6001) are supplied to the logic block, and CTSW pulses are produced, as shown in Figure V6).

b. These CTSW pulses are supplied to Q5001 and Q5002 from pin 16, 21, 25, 30 of IC5001. (See Figure V7.)

c. If CTSW1 (low signal) is supplied to Q5001-A, this transistor turns off and the recording current is supplied to the R1 head. At the same time, transistors are turned on both side of the R1 head so that the heads are shorted and recording current can not be supplied to them. In playback mode the shorted heads can not take out the output signal.

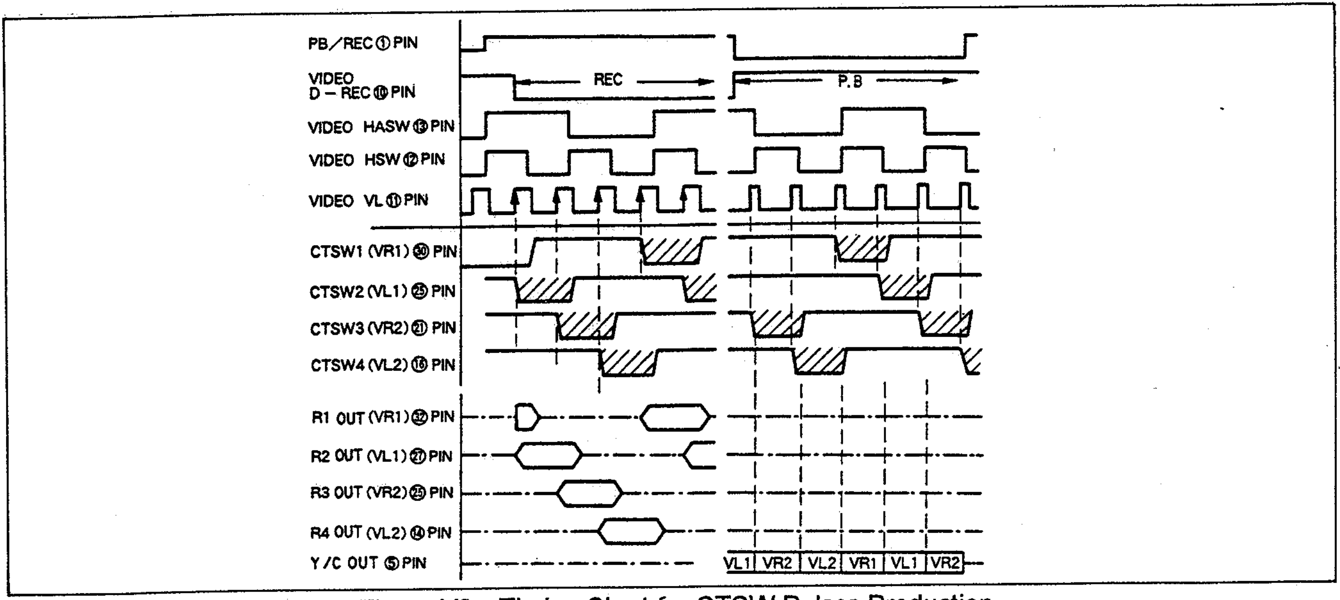

PB/REC ① PIN
VIDEO D – REC ⑩ PIN
VIDEO HASW ⑬ PIN
VIDEO HSW ⑫ PIN
VIDEO VL ⑪ PIN
CTSW1 (VR1) ㉚ PIN
CTSW2 (VL1) ㉕ PIN
CTSW3 (VR2) ㉑ PIN
CTSW4 (VL2) ⑯ PIN
R1 OUT (VR1) ㉜ PIN
R2 OUT (VL1) ㉗ PIN
R3 OUT (VR2) ㉓ PIN
R4 OUT (VL2) ⑭ PIN
Y/C OUT ⑤ PIN
REC
P.B
VL1
VR2
VL2
VR1
VL1
VR2

Figure V6 Timing Chart for CTSW Pulses Production

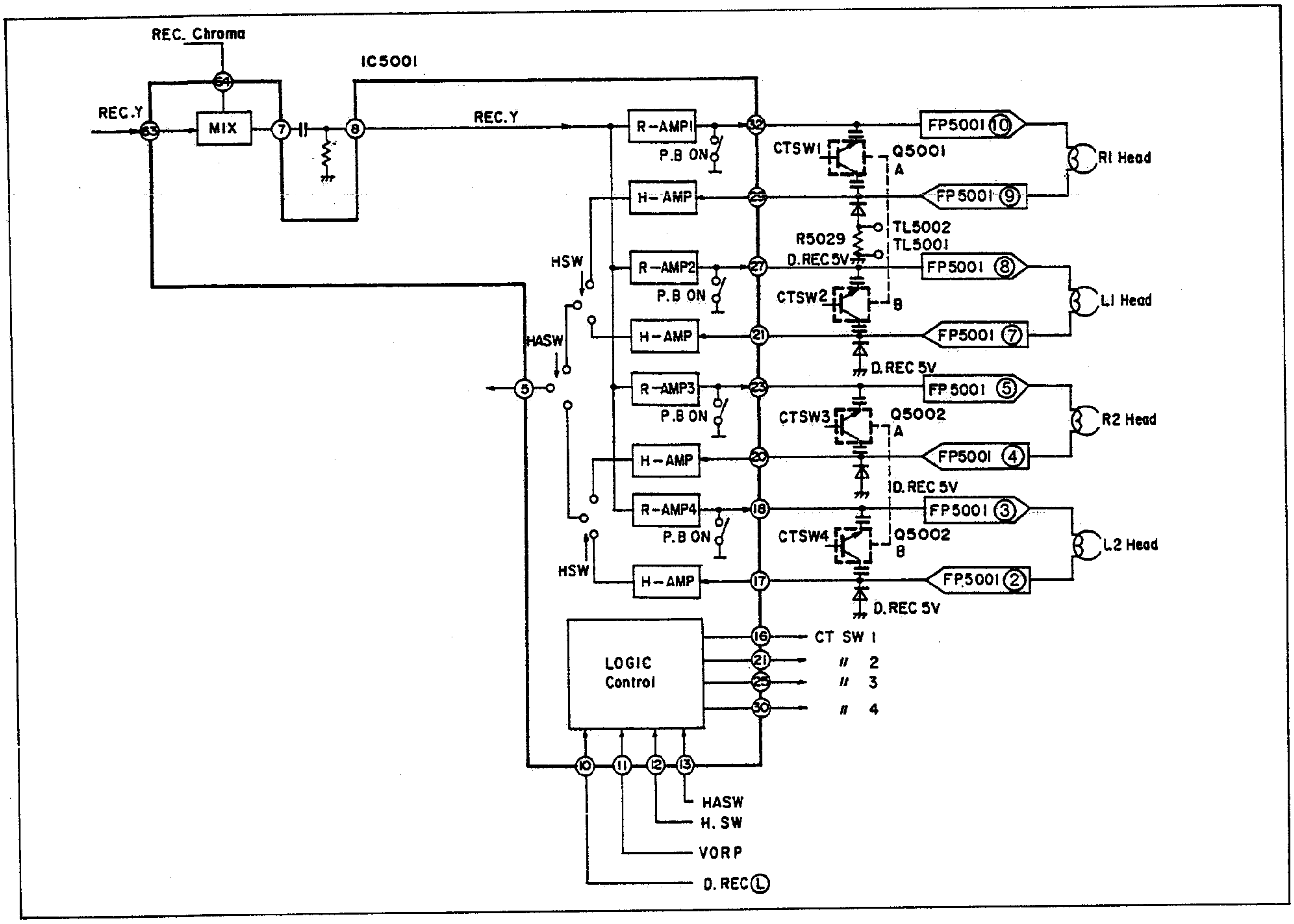

REC. Chroma
IC5001
REC.Y
MIX
REC.Y
R-AMP1
P.B ON
H-AMP
R-AMP2
P.B ON
H-AMP
R-AMP3
P.B ON
H-AMP
R-AMP4
P.B ON
H-AMP
HSW
HASW
HSW
CTSW1
CTSW2
CTSW3
CTSW4
Q5001 A
B
Q5002 A
Q5002 B
R5029
D.REC 5V
TL5002
TL5001
FP5001 ⑩
FP5001 ⑨
FP5001 ⑧
FP5001 ⑦
FP5001 ⑤
FP5001 ④
FP5001 ③
FP5001 ②
R1 Head
L1 Head
R2 Head
L2 Head
D.REC 5V
LOGIC Control
CT SW 1
〃 2
〃 3
〃 4
HASW
H. SW
VORP
D.REC Ⓛ

Figure V7 Head Amp Circuit

2-2. Luminance Playback Operation

1) Head Amplifier

IC5001 amplifies the video signal received by the 4 rotary heads and switches the effective head out by CTSW, H.SW and H.A.SW pulses.

In the playback mode, the switches in IC5001 which are connected to one side of the video head are turned on. D.REC 5V (delayed REC 5V) is not supplied; therefor, the signal from video heads are applied to head amplifier IC5001. These signals are selected sequentially and combined together by H.SW and H.A.SW pulses, as shown in Figure V7. and V8.

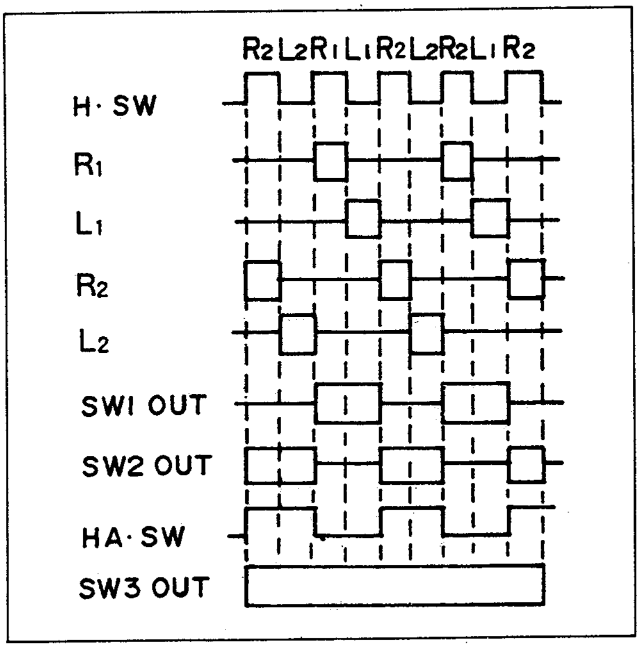


Figure V8 Output of Head Amplifier

2) 627 (PAL) /629 (NTSC) KHz Trap

The playback signal from head amplifier IC5001-5 includes luminance and chrominance components. The chrominance signal is eliminated by this 627KHz (PAL) / 629KHz (NTSC) filter.

3) S-VHS/VHS Detector

This circuit senses whether the system was recorded in the S-VHS or VHS mode by monitoring the carrier frequency of RF ENV signal. Figure V9. shows the S-VHS/VHS detection circuit. In playback mode, the RF signal from head amp is supplied to IC3001-37 and is amplified by RF AGC and then supplied to the peak amplifier, which has a 5.5MHz peak. S/V detector detects if these are large enough 5.5MHz components.
Since S-VHS frequency range is 5.4MHz to 7.0MHz and VHS is 3.8MHz to 4.8MHz (PAL) / 3.4MHz to 4.4 MHz (NTSC), if the level of 5.5MHz is high, it means S-VHS recording. The S/V detector generates a high signal for S-VHS mode.

In recording mode, IC6004 detects the key operation (if S-VHS is selected in the menu) and mechanical switch for S-VHS cassette detection, and sends a VHS low signal to IC3001-21.

RF ENV signal is also used to judge the tracking condition for servo control (IC3001-21).

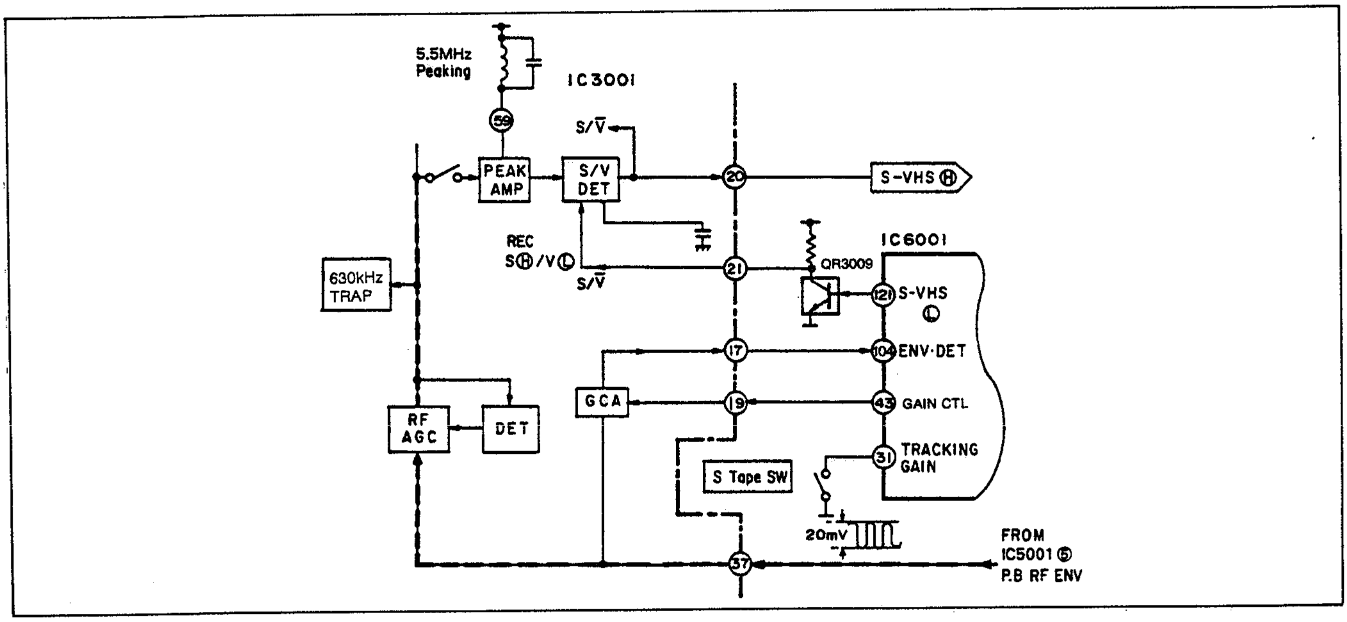


Figure V9 S-VHS Detection

4) S-VHS/VHS Equalizer

Since higher frequencies cannot be recorded and played back well due to head characteristics, the higher frequency must be boosted so as not to be carrier lost (See Figure V10).

For the S-VHS a peak frequency of approximately 7.8MHz is boosted by using the peak amplifier, which is organized by two delay lines and transistors.
In the VHS, approx. 4.7MHz is boosted.

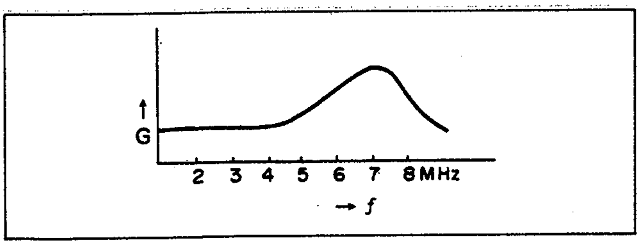


Figure V10 Characteristics of S-VHS Equalizer Amp

5) Double Limiter (D.LIM)

When a large drop of the FM carrier occurs during playback, the double Limiter recovers the carrier signal loss.

6) FM Demodulator (DEM)

Returns the recorded FM signal to the original AM signal.

7) De-Emphasis

The incoming video signal that had the higher frequency emphasized by attenuating the higher frequency signal to the original level (the converse of the emphasis operation).

8) Y Noise Reduction (YNR)

Reduce the noise by using a 1H delay line to detect the parts of the signal that are the same and cancel the noise.

9) Y/C Mix

The playback luminance signal is mixed with the playback chrominance signal sent from IC8001-43 to IC3001-18, and it becomes the video signal which is supplied to the output.

2-3. Chrominance Circuit Operation

The block diagram of chrominance circuit is shown in Figure V.11.

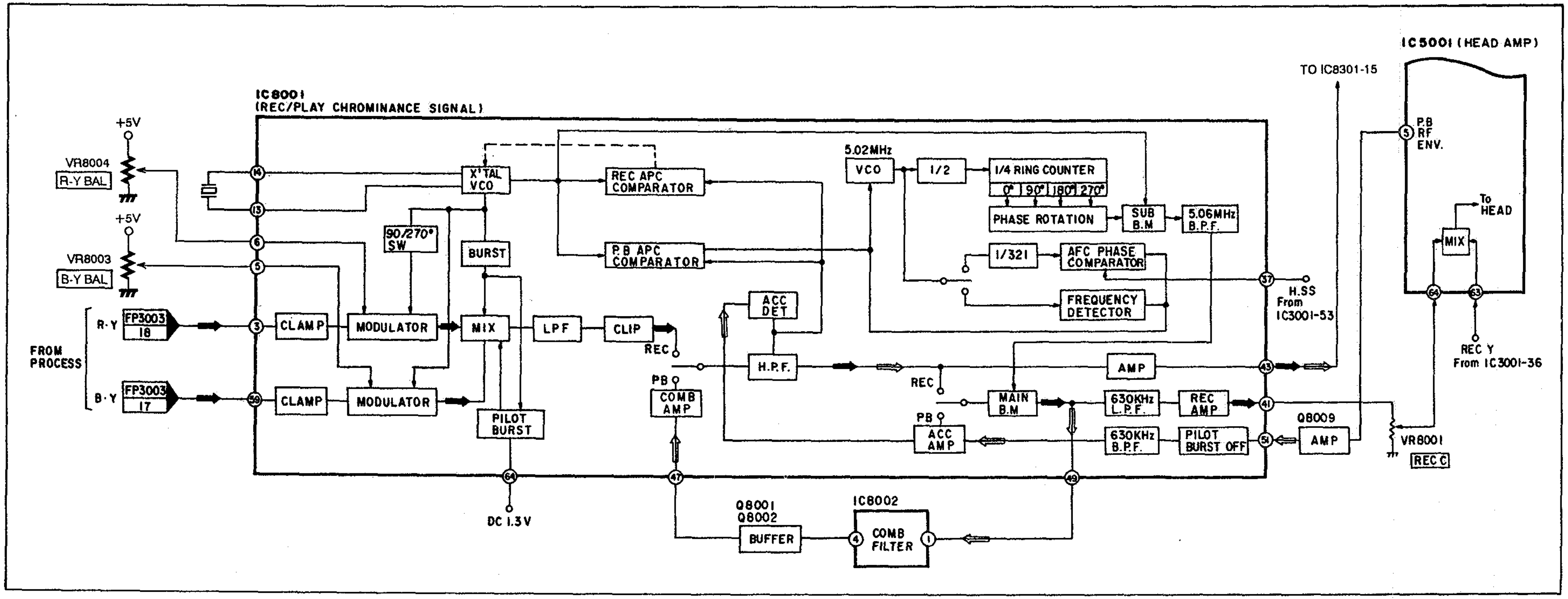

IC8001
(REC/PLAY CHROMINANCE SIGNAL)
+5V
VR8004
R-Y BAL
+5V
VR8003
B-Y BAL
FROM PROCESS
R-Y
FP3003 18
B-Y
FP3003 17
CLAMP
CLAMP
MODULATOR
MODULATOR
90/270° SW
X'TAL VCO
BURST
MIX
PILOT BURST
LPF
CLIP
REC
PB
COMB AMP
REC APC COMPARATOR
P.B APC COMPARATOR
ACC DET
H.P.F.
5.02MHz
VCO
1/2
1/4 RING COUNTER
0° 90° 180° 270°
PHASE ROTATION
SUB B.M
5.06MHz B.P.F.
1/321
AFC PHASE COMPARATOR
FREQUENCY DETECTOR
AMP
REC
MAIN B.M
PB
ACC AMP
630KHz L.P.F.
630KHz B.P.F.
REC AMP
PILOT BURST OFF
H.SS From IC3001-53
TO IC8301-15
Q8009
AMP
VR8001
REC C
IC5001 (HEAD AMP)
PB RF ENV.
To HEAD
MIX
REC Y From IC3001-36
DC 1.3V
Q8001 Q8002
BUFFER
IC8002
COMB FILTER
14
13
6
5
3
59
64
47
49
43
41
51
37
4
1
63

Figure V11 Block Diagram of Chrominance Circuit

1) R-Y/B-Y Modulation

The R-Y and B-Y signals from camera section are supplied to the chrominance IC8001-3 (R-Y) and IC8001-59 (B-Y). For PAL model, these are modulated to 4.43 MHz with phase alternation characteristics (90/270 degree switch circuit performs this). these are then mixed together.

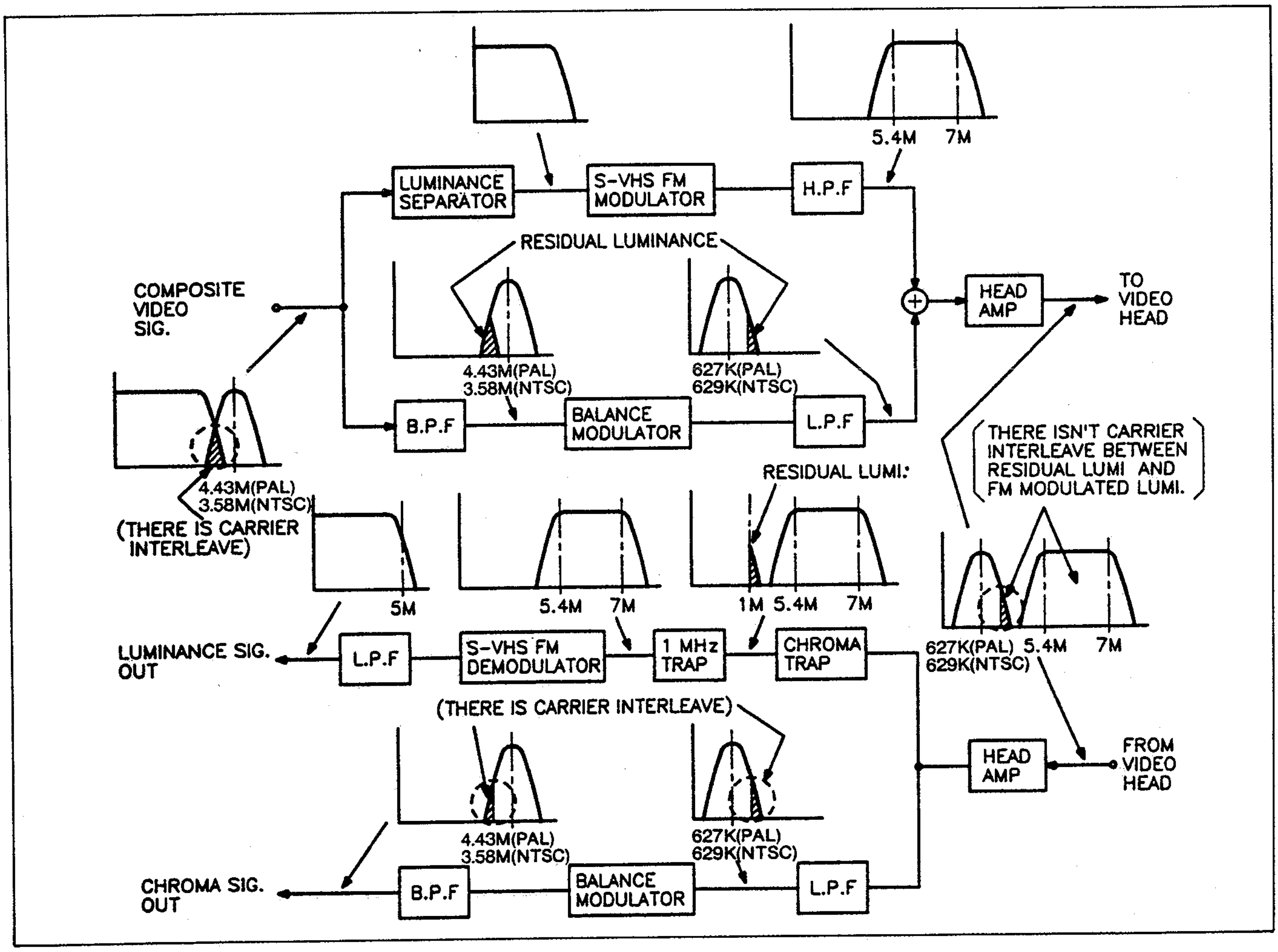
2) Pilot Burst Mix (PAL model only)

The pilot burst signal is used to detect whether a Y/C separate signal (components) is entered or a Y/C mixed signal (composite color signal) is entered when in the S-VHS mode. (When normal VHS is used, the pilot signal is mixed with the chroma signal).

If a composite signal is entered, the signal must be separated into luminance and chrominance signals before processing. This separate can not be done perfectly, and a little of the luminance signal remains in the chrominance signal, causing color interference.

To avoid this, an approximately 1 MHz trap is used to cancel the interference from composite signal. In the camera, the Y/C separate signal is used, but this pilot burst signal must be inserted for use by other table S-VHS VCR's.

This pilot burst signal, which is 4.43 MHz/3.58 MHz with a 270 degree phase difference from the U axis, must be inserted to the horizontal sync portion, as shown in Figure V13 and V14.



5.4M 7M
LUMINANCE SEPARATOR
S-VHS FM MODULATOR
H.P.F
RESIDUAL LUMINANCE
COMPOSITE VIDEO SIG.
4.43M(PAL) 3.58M(NTSC)
627K(PAL) 629K(NTSC)
HEAD AMP
TO VIDEO HEAD
B.P.F
BALANCE MODULATOR
L.P.F
THERE ISN'T CARRIER INTERLEAVE BETWEEN RESIDUAL LUMI AND FM MODULATED LUMI.
RESIDUAL LUMI:
4.43M(PAL) 3.58M(NTSC)
(THERE IS CARRIER INTERLEAVE)
5M
5.4M 7M
1M 5.4M 7M
LUMINANCE SIG. OUT
L.P.F
S-VHS FM DEMODULATOR
1 MHz TRAP
CHROMA TRAP
627K(PAL) 5.4M 7M 629K(NTSC)
(THERE IS CARRIER INTERLEAVE)
HEAD AMP
FROM VIDEO HEAD
4.43M(PAL) 3.58M(NTSC)
627K(PAL) 629K(NTSC)
CHROMA SIG. OUT
B.P.F
BALANCE MODULATOR
L.P.F

Figure V12 Y/C Separation for Composite Signal

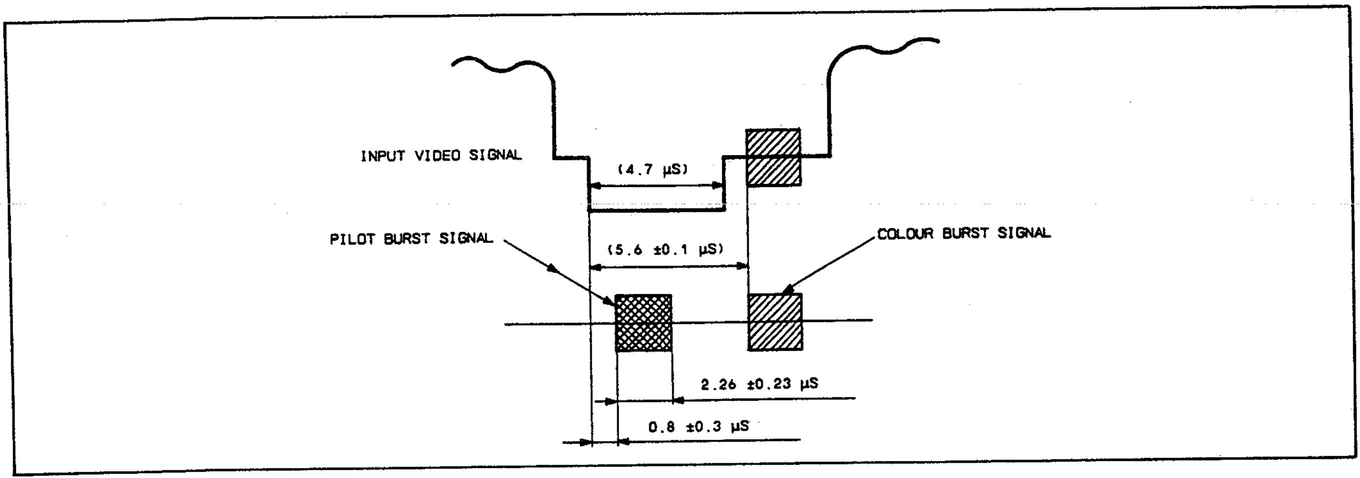

INPUT VIDEO SIGNAL
(4.7 µS)
PILOT BURST SIGNAL
(5.6 ±0.1 µS)
COLOUR BURST SIGNAL
2.26 ±0.23 µS
0.8 ±0.3 µS

Figure V13 Pilot Burst Signal

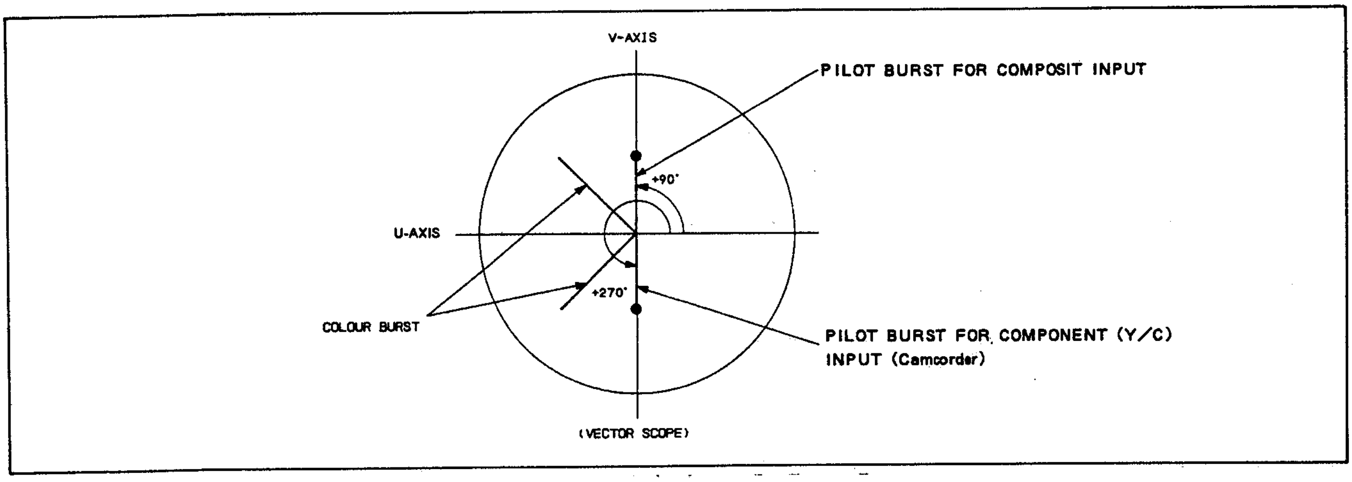

V-AXIS
PILOT BURST FOR COMPOSIT INPUT
+90°
U-AXIS
+270°
COLOUR BURST
PILOT BURST FOR COMPONENT (Y/C) INPUT (Camcorder)
(VECTOR SCOPE)

Figure V14 Phase of Pilot Burst

3) LPF & HPF

These filters are used to remove high frequency and low frequency noise.

4) Main B.M. (Balance Modulator)

This is used to convert the incoming chrominance signal (4.43 MHz) to 627 KHz signal for PAL / (3.58 MHz) to 629 KHz signal for NTSC does not interfere with FM luminance signal (3.8 MHz to 4.8 MHz for PAL / 3.4 MHz to 4.4 MHz for NTSC).
The function of B.M. is to generate the additional frequency and subfractional frequency of the two input signals.
The input signals are a 4.43 MHz (PAL) / 3.58 MHz (NTSC) chroma signal, and a 5.06 MHz (PAL) / 4.2 MHz (NTSC) signal, which is produced for down conversion.

The two output signals of B.M. are 9.49 MHz (5.06 + 4.43) and 627 KHz (5.06 - 4.43) for PAL. For NTSC, the two output signals of B.M. are 7.78 MHz (4.2 + 3.58) and 629 KHz (4.2 - 3.58).

5) 630 KHz LPF

The only 627 KHz (PAL) / 629 KHz (NTSC) B.M. out is extracted by this filter and is sent out from IC8001-41 to the head amplifier IC5001-64 to be mixed with luminance signal for recording.

6) Phase Rotation

The odd field (CH B) is shifted 90 degrees for each horizontal period to cancel the crosstalk from adjacent tracks. During playback mode, this is returned to the original signal for PAL.

7) Sub B.M. (Balance Modulation)

This produces the 5.06 MHz (PAL) / 4.2 MHz (NTSC) signal for down conversion.

8) 5.06 MHz BPF (PAL) / 4.2 MHz BPF (NTSC)

This is to pass the 5.06 MHz (PAL) / 4.2 MHz (NTSC) signal coming from sub B.M..

9) AFC Phase Comparator

The AFC circuit detects the phase difference between the incoming horizontal sync (IC8001-37) and the internal Fh (counted down VCO's 5.02 MHz), to generate a VCO of 5.02 MHz with the same phase as the incoming sync for PAL.

2-4. Chrominance Playback Operation

1) Pilot Burst Off (PAL model only)

This circuit eliminates the pilot burst signal that was inserted in the REC mode.

2) 630 KHz LPF

630 KHz low pass filter passes the only played back chroma signal.

3) Main B.M.

The input signals are the same as in record mode. One is the 627 KHz (PAL) / 629 KHz (NTSC) playback signal, and the other is 5.06 MHz (PAL) / 4.2 MHz (NTSC) signal. The output is the 4.43 MHz (PAL) / 3.58 MHz (NTSC) original frequency and 5.68 MHz (PAL) / 4.83 MHz (NTSC), which is later cut out.

4) Comb Filter

The comb filter has special frequency responses so that like a comb, it passes only pure chroma signal (noise is cut), which is used to cancel the crosstalk noise adjacent tracks.

5) HPF

The high pass filter allows only the 4.43 MHz (PAL) / 3.58 MHz (NTSC) chroma signal to pass from the two frequencies which are supplied from the output of the B.M.. The rest of the block is the same as the recording circuit; the playback chroma signal finally is sent from IC8001-43 to IC3001-18 to be mixed with luminance signal.

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F417002NTkD190

⚠ Warning
This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advice non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service manual by anyone else could result in serious injury or death.

Order No. VSD9506S207
D4

Service Manual

Supplement

NTSC / PAL Video Product

Subject : Change of Coil

Please use this supplement together with the Service Manual as follows :

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	53	VSD9406M252A/B V174/P6	A5 - - -
AG-DP800E/EG	40	VSD9408M636A/B	A5 - - -

Board: REAR JACK C.B.A.

Reason for Change

☐ The following part(s) has(have) been changed for serviceability improvement.
☒ The following part(s) has(have) been changed for productivity improvement.
☐ The following part(s) has(have) been changed for standardization.
☐ The following part(s) has (have) been changed for the safety regulation.
☐

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.
B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.
D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Others

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
L1009	VLQ047680K	VLQ0621	COIL	1	C	

TE2-4126

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Service Manual

Supplement

Video Product

Subject: ZEBRA Adjustment Procedure

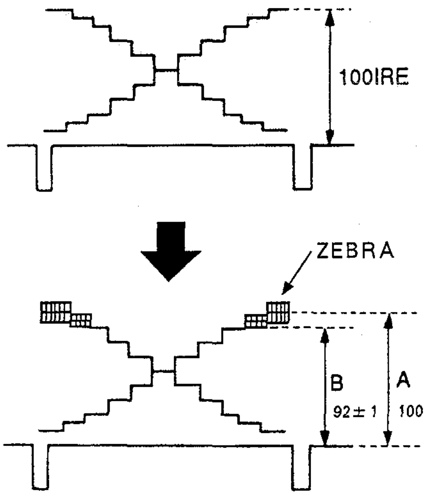
Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.
AG-DP800P	44	VSD9406M252B

The follows procedure added in the Electrical Adjustment section of the service manual.

ZEBRA LEVEL ADJ.

BOARD	VIDEO C.B.A.
TP	TP3001[E-1]
ADJ.	VR3002[E-1]
TAPE	
INPUT	CAMERA (GRAY SCALE)
MODE	STOP
M.EQ	WFM, OSCILLOSCOPE
SPEC.	A : B = 100 : 92 ± 1



1. Connect the WFM to camera output.
2. Set the IRIS ring so that video level becomes 100 IRE as shown in figure.
3. Connect the scope to TP3002.
4. Adjust VR3002 so that ZEBRA level (B) becomes 92 ± 1% against (A) level as shown in figure.

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Service Manual

Supplement

Video Product

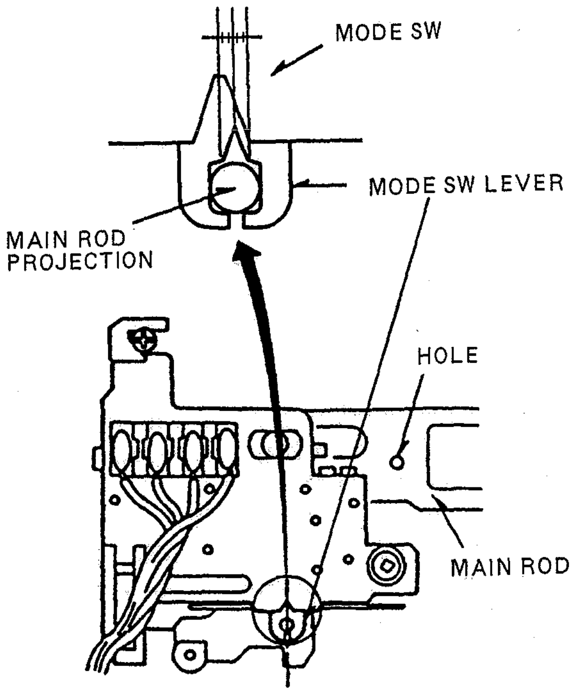
Subject: Correction of Mode SW Position Adjustment

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.
AG-DP800P	45	VSD9406M252B

May not accept function key operations during the REV mode from PLAY mode, the assembly procedure of the mode switch has been changed as below.

1. The hole on Main Rod is meeting with the hole on the chassis.
2. Fix the mode switch with 2 screws (not tight).
3. Set the mode switch keeping relation in step.1 and position as shown in figure then tight 2 screws.



(TM2-3031)

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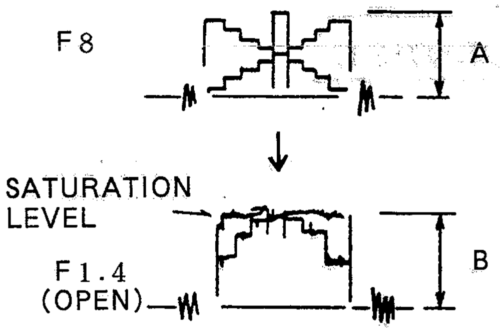
7-2-7. DYNAMIC RANGE ADJ. (Revised)

BOARD	PROCESS C.B.A.
TP	TP3023[E-1](R), TP3024[E-1](G) TP3022[E-1](B) PROCESS C.B.A.
ADJ.	VR504[A-1](R), VR505[A-1](G) VR506[A-1](B) CCD DRIVE C.B.A. VR7[C-3](R), VR8[C-3](G) VR9[C-3](B) CCD PULSE C.B.A.
F.NBR	F8 → OPEN
CHART	GRAY SCALE
M.EQ	OSCILLOSCOPE or WFM
SPEC.	B : A = 3 : 1



B (green) = 3 × A (green) level
B (red) = 3 × A (red) level
B (blue) = 3 × A (blue) level

NOTE:The scope probe must be use 1:1 type.

<G-channel>

1. Set the IRIS to F8 position.
2. Connect the scope to TP3024.
3. Read a the level "A-green" as shown in Figure.
4. Turn the IRIS to OPEN position.
5. Adjust VR505(coarse) and VR8(fine) so that level "B-green" is 3 times of level "A-green".

<R-channel>

6. Set the IRIS to F8 position.
7. Connect the scope to TP3023.
8. Read a the level "A-red" as shown in Figure.
9. Turn the IRIS to OPEN position.
10. Adjust VR504(coarse) and VR7(fine) so that level "B-red" is 3 times of level "A-red".

<B-channel>

11. Set the IRIS to F8 position.
12. Connect the scope to TP3022.
13. Read a the level "A-blue" as shown in Figure.
14. Turn the IRIS to OPEN position.
15. Adjust VR506(coarse) and VR9(fine) so that level "B-blue" is 3 times of level "A-blue".

    If the B-channel adjustment does not meet to specification level, therefor adjust level becomes maximized.

Service Manual

Supplement

Video Product

Subject: Y/C Timing Adjustment Procedure

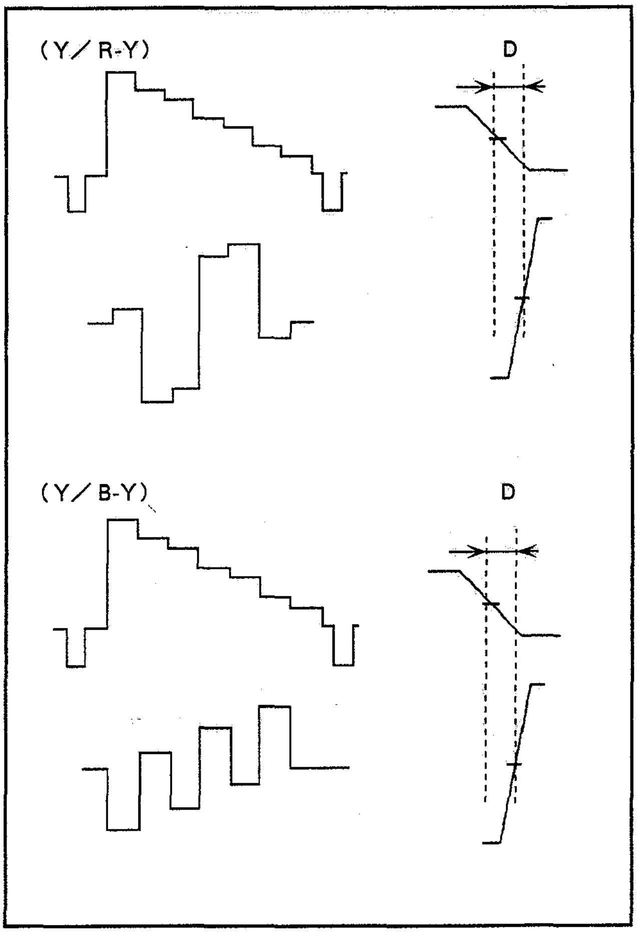
Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.
AG-DP800P	43	VSD9406M252B

The following procedure added in the Electrical Adjustment section of the service manual.

Y/R-Y. Y/B-Y TIMING ADJ.

BOARD	PROCESS C.B.A.
TP	TP3711[A-3](Y), TP3713[A-3](R-Y) TP3714[A-3](B-Y)
ADJ.	VR3703[A-2](R-Y), VR3702[A-3](B-Y)
INPUT	CAMERA COLOR BAR
M.EQ	OSCILLOSCOPE
SPEC.	D = 0 ± 20ns



NOTE: This adjustment should be perform after completion of 7-2-9. Y GAIN ADJ.

1. Set the OUTPUT selector SW to BAR side.

<Y/R-Y>

2. Connect the scope CH1 to TP3711 and CH2 to TP3713.
3. Adjust VR3703 so that D = 0±20ns as shown in figure.

<Y/B-Y>

4. Change connection of the scope CH2 to TP3712.
5. Adjust VR3702 so that D = 0±20ns as shown in figure.

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Service Manual

Supplement

Video Product

Subject: Correction of Camera Adjustment Procedure

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.
AG-DP800P	42	VSD9406M252B

The order of Camera adjustment procedure in the service manual Vol.2 has been corrected as follows.

7-2-2. SAMPLING PULSE ADJ.
↓
7-2-3. CLAMP PULSE ADJ.
↓
7-2-4. RESET PULSE ADJ.
↓
7-2-18. APP G INPUT LEVEL ADJ.
↓
7-2-19. APP R.B INPUT LEVEL ADJ.
↓
7-2-5. OG (1) ADJ.
↓
7-2-6. OG (2) ADJ.
↓
7-2-7. DYNAMIC RANGE ADJ. --- (see next page)
↓

Following order is same as original step in the service manual.
Except above steps 7-2-18 and 7-2-19, these adjustment do not perform after this step.

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Service Manual

Supplement

Video Product

Subject: Improvement of IRIS Speed Control

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	41	VSD9406M252A	L4T---

Board :PROCESS C.B.A.(VEP23198C)

The IRIS response is not quick enough at fully tele or wide side, the following capacitor has been changed for improvement.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
C3644	ECEV0JV101Q	ECEV1CV470Q	E.CAPACITOR 16V 47U	1	C	

(TE2-4096)

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Service Manual

Supplement

Video Product

Subject: Change of LCD Microprocessor IC

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	39	VSD9406M252A	K4T---

Board :LCD C.B.A.(VEP06956A)

The following IC has been changed, in order to improve low voltage operating conditions.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
IC6901	D75308BGF132	D75308BGF135	IC	1	C	

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Service Manual

Supplement

Video Product

Subject: Change of Syscon Microprocessor IC (No.2)

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	40	VSD9406M252A	K4T---

Board :AUDIO/SYSCON C.B.A.(VEP04442B)

New change:

1. Back-up the pervious scene file selected position.
2. Add "OPEN" character display in the EVF when the IRIS is open.(more then F2.0 position)
3. The IRIS automatically closes when the unit is powered off.
4. Selectable SETUP level in the menu mode.(0% or 7.5%)

■ Software version: B<1.2>

NOTE: Items 2,3 and 4 works in conjunction with CAMERA IC Ver. D<1.4>. --- see Bulletin No.23

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
IC6501	UPD78148F045	UPD78148F049	IC	1	C	

(TE2-4039)

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Service Manual

Supplement

Video Product

Subject: Change of Earth Cable

Please use this supplement together with the Service Manual as follows:

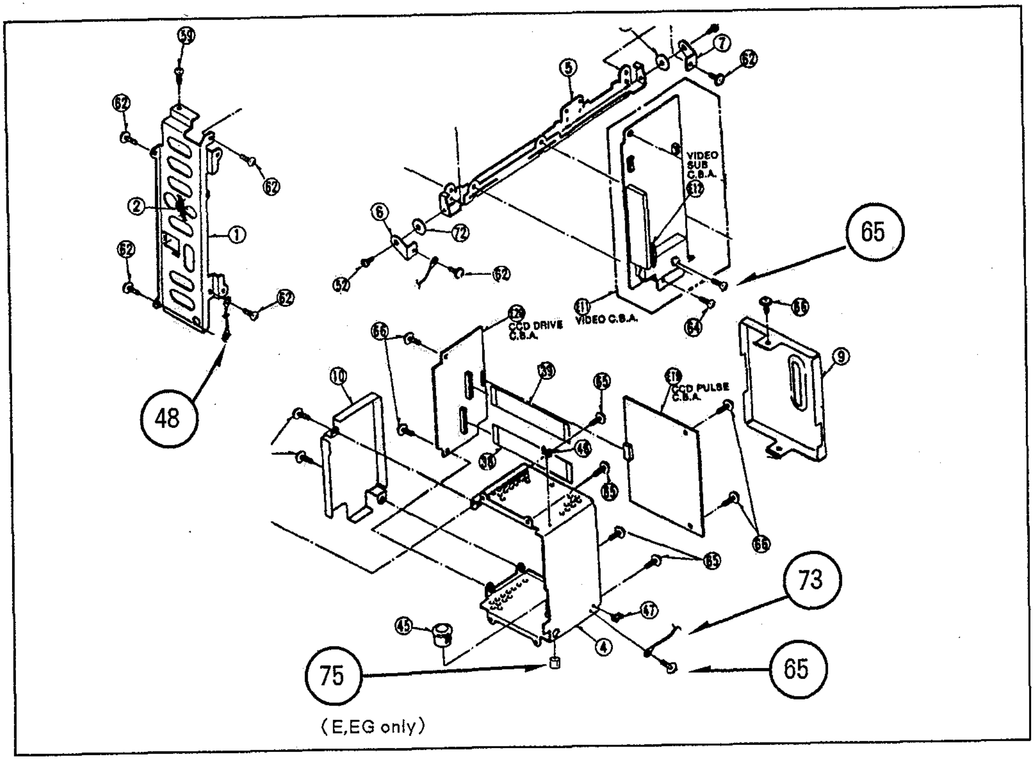
Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	37	VSD9406M252A	Running Change

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
48	VEE9025	VEE9074	EARTH CABLE	1	C	
73	- - -	VEE9075	EARTH CABLE	1	C	
65	- - -	XYN3+C6	SCREW	2	C	


(59)
(62)
②
①
⑤
⑦
⑥
(72)
(52)
VIDEO SUB C.B.A.
(612)
65
(411)
VIDEO C.B.A.
(64)
(66)
⑨
(26)
CCD DRIVE C.B.A.
(39)
(65)
(41)
CCD PULSE C.B.A.
⑩
(46)
(38)
48
(45)
④
(47)
73
75
65
(E,EG only)

(TM2-2939,3955)

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Service Manual

Supplement

Video Product

Subject: Change of Camera Micrprocessor (No.5)

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	38	VSD9406M252A	L4T---

Board :PROCESS C.B.A.(VEP23198C)

Reason for Change

☐ The following part(s) has(have) been changed for serviceability improvement.
☐ The following part(s) has(have) been changed for productivity improvement.
☐ The following part(s) has(have) been changed for standardization.
☐ The following part(s) has(have) been changed for the safety regulation.
☐ No softwaer change

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. *Use original parts possible then stock new parts.*
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
IC3600	VSI1506E	MN1883210H8G	IC	1	A	

(TE2-4084)

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Service Manual

Supplement

Video Product

Subject: Change of +5V Regulator Circuit

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	35	VSD9406M252A	J4T---

Board :CCD DRIVE C.B.A.(VEP20491C)
CCD PULSE C.B.A.(VEP20490A)

In order to improve fluctuation of the DC voltage, the following resistors have been changed to high precision type resistors.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
R574	ERJ3GEYJ563	VRE0071E473	M.RESISTOR CH 47K	1	C	CCD DRIVE C.B.A.
R575	ERJ3GEYJ575	VRE0071E123	M.RESISTOR CH 12K	1	C	DO
R576	ERJ3GEYJ473	VRE0071E683	M.RESISTOR CH 68K	1	C	DO
R577	ERJ3GEYJ123	VRE0071E163	M.RESISTOR CH 16K	1	C	DO
R568	ERJ3GEYJ393	VRE0071E393	M.RESISTOR CH 39K	1	C	DO
R569	ERJ3GEYJ183	VRE0071E183	M.RESISTOR CH 18K	1	C	DO
R570	ERJ3GEYJ563	VRE0071E563	M.RESISTOR CH 56K	1	C	DO
R571	ERJ3GEYJ223	VRE0071E223	M.RESISTOR CH 22K	1	C	DO
R37	ERJ3GEYJ393	VRE0071E393	M.RESISTOR CH 39K	1	C	CCD PULSE C.B.A.
R38	ERJ3GEYJ183	VRE0071E183	M.RESISTOR CH 18K	1	C	DO
R39	ERJ3GEYJ563	VRE0071E563	M.RESISTOR CH 56K	1	C	DO
R40	ERJ3GEYJ223	VRE0071E223	M.RESISTOR CH 22K	1	C	DO

(TE2-4040)

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Service Manual

Supplement

Video Product

Subject: Change of Mechanism Angle (R)

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	36	VSD9406M252A	K4T---

Reason for Change

☐ The following part(s) has(have) been changed for serviceability improvement.
☐ The following part(s) has(have) been changed for productivity improvement.
☐ The following part(s) has(have) been changed for standardization.
☐ The following part(s) has(have) been changed for the safety regulation.
☐

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
3	VMP4269	VMP4590	MECHANISM ANGLE (R)	1	C	

(TM2-3029)

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Service Manual

Supplement

Video Product

Subject: Change of Camera Microprocessor IC (No.4)

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	33	VSD9406M252A	J4T---

Board :PROCESS C.B.A.(VEP23198C)

The IRIS hunting modification (see supplement service manual bulletin No.30) is now performed by a new camera microprocessor software.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
IC3600	MN1883210H8F	VSI1506E	IC	1	C	
R3654	- - -	ERJ3GEYJ183	M.RESISTOR CH 1/16W 18K	1	C	
R3655	ERDS2TJ183	- - -		0	---	

(TE2-4053)

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Service Manual

Supplement

Video Product

Subject: Improvement of Y/C Timing

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	34	VSD9406M252A	J4T---

Board :VIDEO C.B.A.(VEP03B01A)

The Y/C timing may not be correct in recording mode, following delay line has been changed.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
DL3001	ELB4C559	ELB4C561	DELAY LINE	1	C	

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Service Manual

Supplement

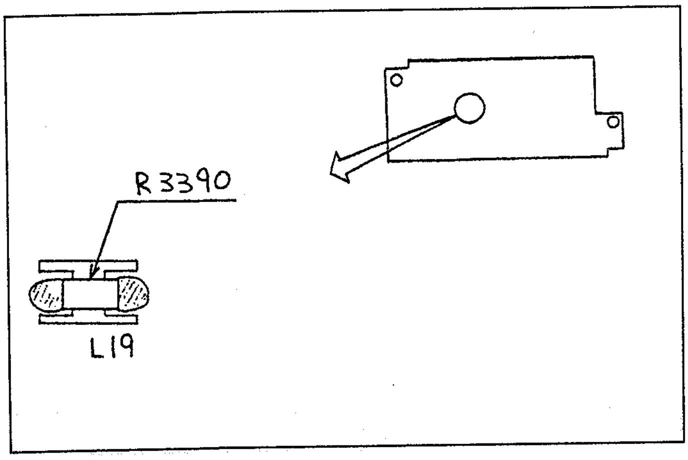
Video Product

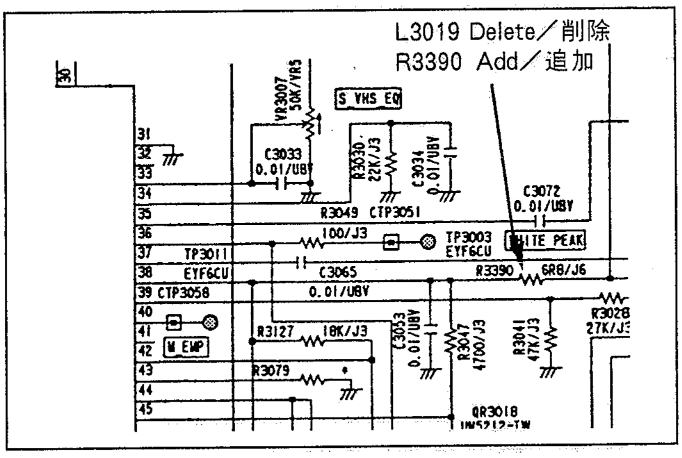
Subject: Change of 3.5V Regulator Circuit

Please use this supplement together with the Service Manual as follows:			
Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	31	VSD9406M252A	J4T---

Board :VIDEO C.B.A.(VEP03B01A)

The following parts change has been introduced in the PAL models.




L3019 Delete／削除
R3390 Add／追加
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
VR3007 50K/VR5
S VHS EQ
C3033 0.01/UBY
R3030 22K/J3
C3034 0.01/UBY
C3072 0.01/UBY
R3049 CTP3051
100/J3
TP3003 EYF6CU
WHITE PEAK
TP3011
EYF6CU
C3065
0.01/UBY
R3390 6R8/J6
CTP3058
M EMP
R3127 18K/J3
R3079
C3053 0.01/UBY
R3047 4700/J3
R3041 47K/J3
R3028 27K/J3
QR3018 1N5212-TW

Interchangeability Code (I/C)			
A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
IC3008	XC62AP3502ML	XC62AP3601ML	IC	1	A	
L3019	VLQ0319K101	- - -	COIL	0	- -	DELETE
R3390	- - -	ERJ6GEYJ6R8	M.RESISTOR CH 1/10W 6.8	1	A	

(TE2-3981)

Panasonic

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Service Manual

Supplement

Video Product

Subject: Change of Camera Microprocessor IC (No.3)

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	32	VSD9406M252A	J4T---

Board :PROCESS C.B.A.(VEP23198C)

Reason for Change

☐ The following part(s) has(have) been changed for serviceability improvement.
☐ The following part(s) has(have) been changed for productivity improvement.
■ The following part(s) has(have) been changed for standardization.
☐ The following part(s) has(have) been changed for the safety regulation.
■ No software change

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
IC3600	VSI1506D	MN1883210H8F	IC	1	A	

(TE2-4049)

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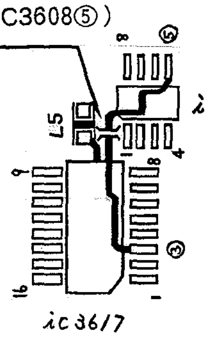
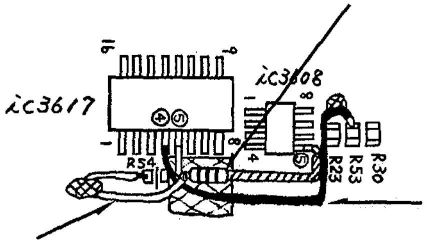
Foil Cut
ハクカット
（IC3617③～IC3608⑤）



8
⑤
ic3608
L5
1
4
8
9
③
16
1
ic3617

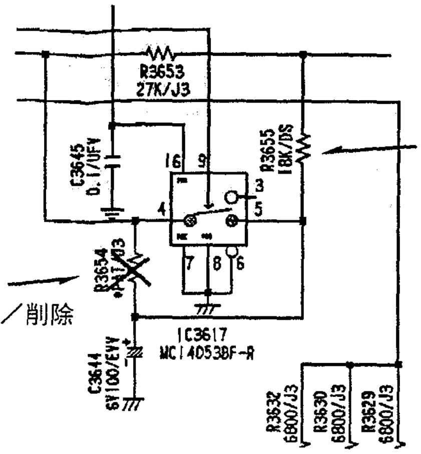
R3655
Add／追加
（IC3617⑤～IC3608⑤）



16
9
ic3617
④
⑤
1
ic3608
1
4
8
⑤
R54
R23
R53
R30

Jamper／ジャンパー
Add／追加
（R53～IC3617④）

Jamper／ジャンパー
Add／追加
（R54～IC3617⑤）



R3653
27K/J3
C3645
0.1/UFY
16
9
3
4
5
7
8
6
R3655
18K/DS
R3654
J3
IC3617
MC14053BF-R
C3644
6V100/EVY
R3632
6800/J3
R3630
6800/J3
R3629
6800/J3

R3655
Add／追加

R3654
Delete／削除

Service Manual

Supplement

Video Product

Subject: Improvement of IRIS Hunting

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	30	VSD9406M252A	I4T---

Board :PROCESS C.B.A.(VEP23198C)

The IRIS may hunt during the AWB, the following modification has been introduced.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
R3615	ERJ3GEYJ123	VRE0071E123	M.RESISTOR 12K	1	E	
R3616	ERJ3GEYJ183	VRE0071E183	M.RESISTOR 18K	1	E	
R3623	ERJ3GEYJ123	VRE0071E123	M.RESISTOR 12K	1	E	
R3624	ERJ3GEYJ183	VRE0071E183	M.RESISTOR 18K	1	E	
R3654	ERJ3GEYJ183	- - -		0	- -	DELETE
R3655	- - -	ERDS2TJ183	C.RESISTOR 1/4W 18K	1	E	

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Service Manual

Supplement

Video Product

Subject: Improvement of OG Adjustment

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	28	VSD9406M252A	I4T---

Board :CCD DRIVE C.B.A.(VEP20491C)

The OG adjustment may out of specification therefor to expand the adjustment range, the following part has been changed.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
R578	ERJ3GEYJ223	ERJ3GEYJ103	M.RESISTOR CH 1/16W 10K	1	C	

(TE2-4005)

Panasonic

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Service Manual

Supplement

Video Product

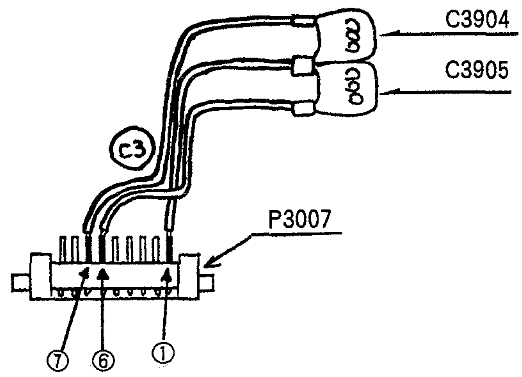
Subject: Countermeasure of Video Beat

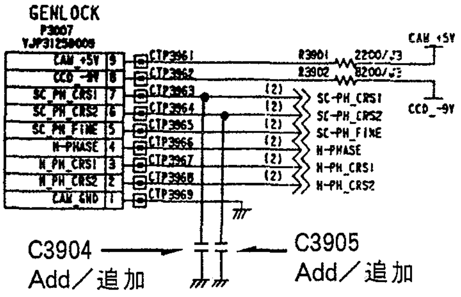
Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	29	VSD9406M252	I4T---

Board :PROCESS C.B.A.(VEP23198C)

Chroma beat may appear due to interference from the wiring of the GEN LOCK input, to reduce noise, following capacitors have been added.


C3904
C3905
C3
P3007
⑦
⑥
①


GENLOCK
P3007
VJP31250009
CAM +5V 9
CCD -9V 8
SC_PH_CRS1 7
SC_PH_CRS2 6
SC_PH_FINE 5
H-PHASE 4
H_PH_CRS1 3
H_PH_CRS2 2
CAM_GND 1
CTP3961
CTP3962
CTP3963
CTP3964
CTP3965
CTP3966
CTP3967
CTP3968
CTP3969
R3901 2200/J3
R3902 8200/J3
CAM +5V
CCD_-9V
(2) SC-PH_CRS1
(2) SC-PH_CRS2
(2) SC-PH_FINE
(2) H-PHASE
(2) H-PH_CRS1
(2) H-PH_CRS2
C3904 Add／追加
C3905 Add／追加

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
C3904,05	- - -	ECQB1H103JF	P.CAPACITOR 50V 0.01U	1	C	

(TE2-3995)

Panasonic

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Service Manual

Supplement

Video Product

Subject: Change of Servo Microprocessor IC (No.2)

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	26	VSD9406M252A	I4T---

Board :AUDIO/SYSCON C.B.A.(VEP04442B)

The following items have been changed.

1. The tape slack sensor may detect during tape loading when the unit operates in low temperature (0°C) therefor timer set up has been changed.
2. When the record tab is broken on the tape, the record inhibit is initiated.

Version: <2.1>

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
IC6001	MN6755243H7C	VSI1507D	IC	1	C	

(TE2-4020)

Panasonic

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Service Manual

Supplement

Video Product

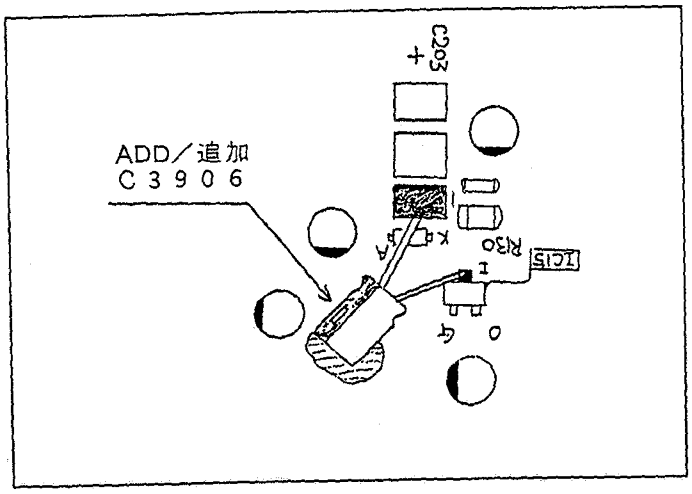
Subject: Countermeasure of DC Regulator Oscillation

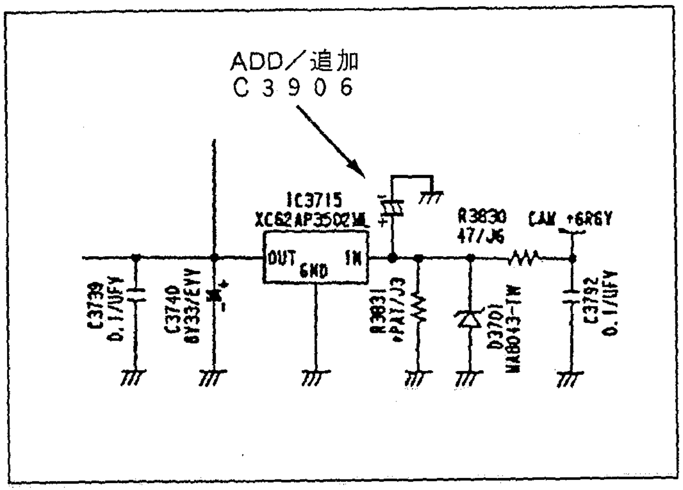
Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	27	VSD9406M252A	14T---

Board :PROCESS C.B.A.(VEP23198C)

To prevent oscillation of the 3 terminal voltage regulator, the following capacitor has been added in the DC regulation circuit.


ADD／追加
C 3 9 0 6


ADD／追加
C 3 9 0 6
IC3715
XC62AP3502ML
OUT
GND
IN
R3830
47/J6
CAM +6R6Y
C3739
0.1/UFY
C3740
6Y33/EVY
R3831
PAT/J3
D3701
MA8043-TW
C3792
0.1/UFY

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
C3906	- - -	ECEA1CK330	E.CAPACITOR 16V 33U	1	C	

(TE2-4014)

Panasonic

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Service Manual

Supplement

Video Product

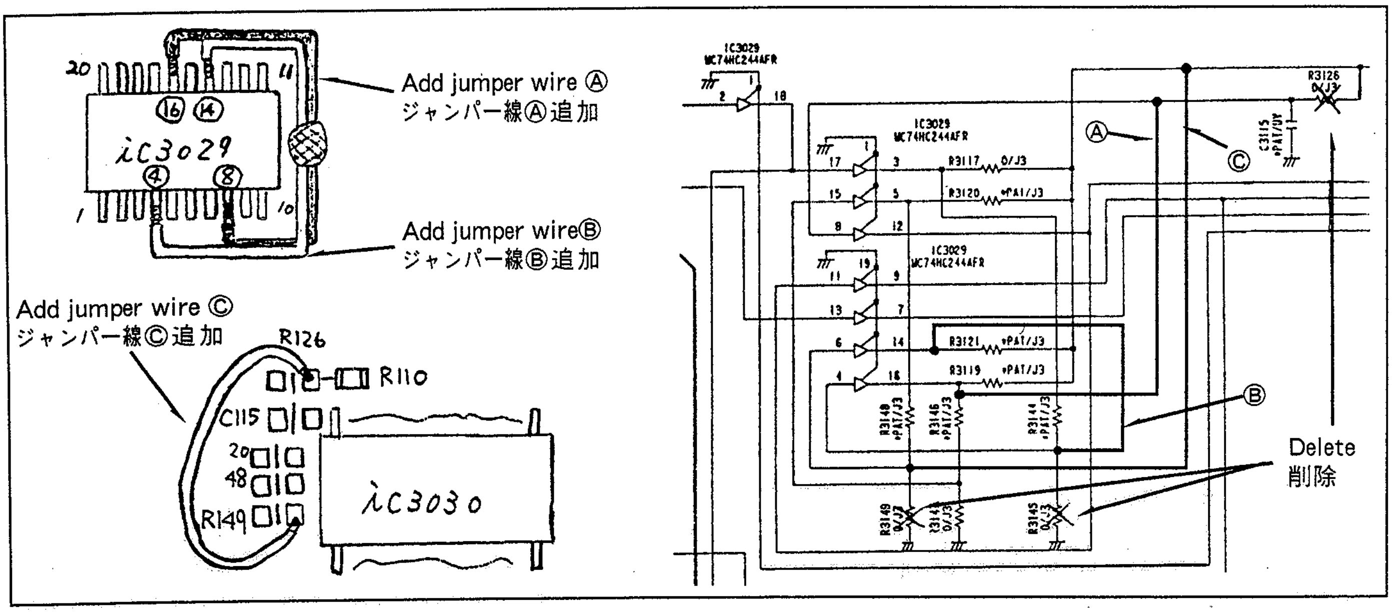
Subject: Y D/A Latch Mis-operation

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	24	VSD9406M252A	I4T---

Board :PROCESS C.B.A.(VEP23198C)

In order to prevent latch mis-timing of the Y D/A convertor, the following modification for expands the timing margin of the D/A.


20
11
⑯ ⑭
ic3029
④ ⑧
1
10
Add jumper wire Ⓐ
ジャンパー線Ⓐ追加
Add jumper wireⒷ
ジャンパー線Ⓑ追加
Add jumper wire Ⓒ
ジャンパー線Ⓒ追加
R126
R110
C115
20
48
R149
ic3030
IC3029
MC74HC244AFR
R3117 0/J3
R3120 *PA1/J3
R3121 *PAT/J3
R3119 *PAT/J3
R3148 *PAT/J3
R3146 *PAT/J3
R3144 *PAT/J3
R3149 0/J3
R3147 0/J3
R3145 0/J3
R3126 0/J3
C3115 *PAT/UY
Ⓐ
Ⓑ
Ⓒ
Delete
削除

Interchangeability Code (I/C)			
A	Original or new parts may be used in early or late production set Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
R3123	ERJ3GEY0R00	- - -		0	- -	DELETE
R3145	ERJ3GEY0R0R	- - -		0	- -	DELETE
R3149	ERJ3GEY0R00	- - -		0	- -	DELETE

(TE2-4037)

Panasonic

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Service Manual

Supplement

Video Product

Subject: Vertical Line Countermeasure

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	25	VSD9406M252A	I4T---

Board :CCD DRIVE C.B.A.(VEP20491C)

Vertical lines may appear in the picture, the following resistors have been changed.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
R562	ERJ3GEYJ333	VRE0071E393	M.RESISTOR 39K	1	C	
R563	ERJ3GEYJ123	VRE0071E153	M.RESISTOR 15K	1	C	
R564	ERJ3GEYJ473	VRE0071E473	M.RESISTOR 47K	1	C	
R565	ERJ3GEYJ153	VRE0071E153	M.RESISTOR 15K	1	C	

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Service Manual

Supplement

Video Product

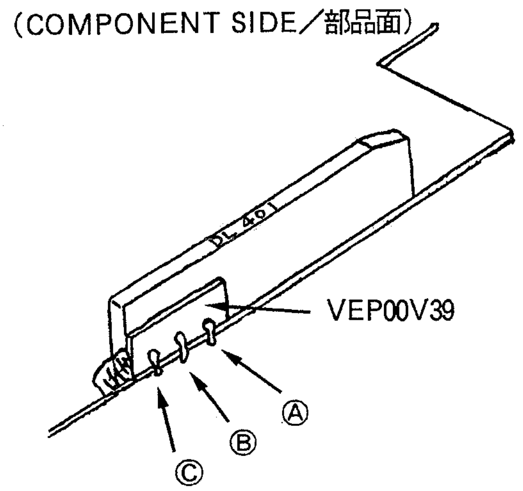
Subject: Addition of Carrier Trap Circuit

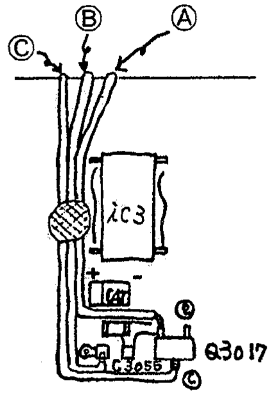
Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	22	VSD9406M252A	I4T---

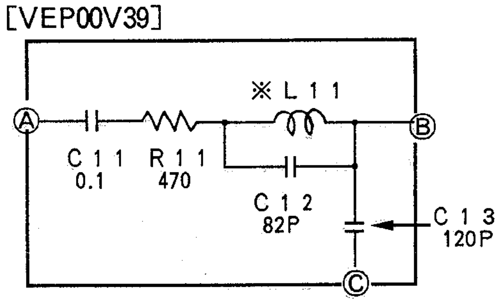
Board :VIDEO C.B.A.(VEP03B01A)

The following small C.B.A. for carrier trap in VHS mode has been added to the Video C.B.A..





(FOIL SIDE／半田面)



※	NTSC	PAL
L11	18U	15U

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
C3055	ECUX1H104ZFV	- - -		0	- -	DELETE
- - -	- - -	VEP00V39A	CARRIER TRAP C.B.A.	1	C	
C11	- - -	ECUM1E104ZFN	C.CAPACITOR CH 25V 0.1U	1	E	ON VEP00V39A
C12	- - -	ECUM1H820JCN	C.CAPACITOR CH 50V 82P	1	E	ON VEP00V39A
C13	- - -	ECUM1H121JCN	C.CAPACITOR CH 50V 120P	1	E	ON VEP00V39A
R11	- - -	ERJ6GEYJ471	M.RESISTOR CH 1/10W 470	1	E	ON VEP00V39A
L11	- - -	VLQ0163J180	COIL 18UH	1	E	ON VEP00V39A

(TE2-4028)

Panasonic

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Service Manual

Supplement

Video Product

Subject: Change of Camera Microprocessor IC (No.2)

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	23	VSD9406M252A	I4T---

Board :PROCESS C.B.A.(VEP23198C)

New changes:

1. Reduce ALC (Auto Iris Control) set up level in EEPROM.
2. Improvement of ABB Low Pass filter control.
3. Correspond to ALC speed of the CANON lens.
4. Add "OPEN" character display in the EVF when the IRIS is open.(more than F2.0 position)
5. The IRIS automatically closes when the unit is powered off.
6. Selectable SETUP level in the menu mode.(0% or 7.5%)

■ Software Version: D<1.4>

NOTE: Items 4,5 and 6 works in conjunction with SYSCON IC Ver. B<1.2>. -- see Bulletin No.40

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
IC3600	VSI1506C	VSI1506D	IC	1	E	CAN BE USED IN NEW PROCESS C.B.A.
QR3609	UN5213	- - -		0	- -	DELETE
QR3607	- - -	UN5213	TRANSISTOR	1	C	

(TE2-4031)

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Service Manual

Supplement

Video Product

Subject: Introduce the New Rear Jack C.B.A.

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	20	VSD9406M252A	H4T---

Board :REAR JACK C.B.A.(VEP01585B)

A new Rear Jack C.B.A. has integrated the following sub assemble into one circuit board. (VEP00U89A)

<Contents of attached pages>

- Schematic Diagrams (1/2 ~ 2/2) (See Page AT-21~AT-22)
- Circuit Board Diagram (See Page AT-23)
- Electrical Parts List (See Page AT-24)

The audio out level of the 26P Backup connector is switchable (-20dB/-60dB) by the SW1001.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
E7	VEP00U89A	---	AUDIO OUT C.B.A.	0	--	DELETE

(TE2-3945)

Panasonic

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Service Manual

Supplement

Video Product

Subject: Change of EVF Case

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	21	VSD9406M252A	H4T---

Note : The EVF unit position has been shifted to approx. 8mm towards the camera head direction. The new part number is for both the upper and lower cases.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
1	VYK5574	- - -	UPPER EVF CASE	0	B	EXCHANGE TO UPPER & LOWER CASE KIT
21	VGM1068	- - -	LOW EVF CASE	0	B	EXCHANGE TO UPPER & LOWER CASE KIT
	- - -	VYK6012KIT	UPPER & LOWER EVF CASES U.	1	E	

(TM2-2930)

Panasonic

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Service Manual

Supplement

Video Product

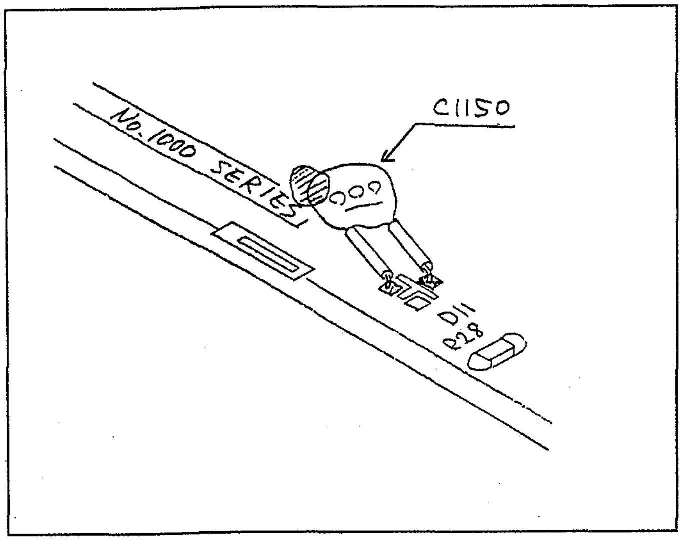
Subject: DC Oscillation Countermeasure

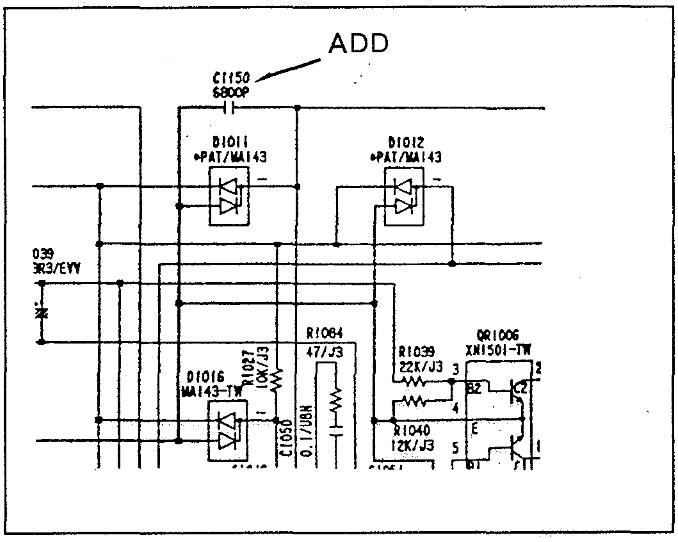
Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	18	VSD9406M252A	H4T---

Board :POWER C.B.A.(VEP01584C)

In order to prevent unsteady DC voltage in a low temperature (-10°C) condition, the following capacitor has been added.


C1150
No.1000 SERIES
D11
828


ADD
C1150
6800P
D1011
•PAT/MA143
D1012
•PAT/MA143
039
3R3/EYY
R1064
47/J3
R1039
22K/J3
QR1006
XN1501-TW
D1016
MA143-TW
R1027
10K/J3
C1050
0.1/U8H
R1040
12K/J3
B2
C2
E
3
4
5

Interchangeability Code (I/C)			
A	Original or new parts may be used in early or late production set Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
C1150	- - -	ECKF1H682KB	C.CAPACITOR 50V 0.068U	1	C	

(TE2-3979)

Panasonic

Printed in Japan

Service Manual

Supplement

Video Product

Subject: Change of ZEBRA Display

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	19	VSD9406M252A	H4T---

Board :VIDEO C.B.A.(VEP03B01A)

In order to increase the contrast level of the ZEBRA display, the following part has been changed.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	*Other*		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
R3347	ERJ3GEYJ681	ERJ3GEYJ122	M.RESISTOR CH 1/16W 1.2K	1	C	

(TE2-3952)

Panasonic

Printed in Japan

Service Manual

Supplement

Video Product

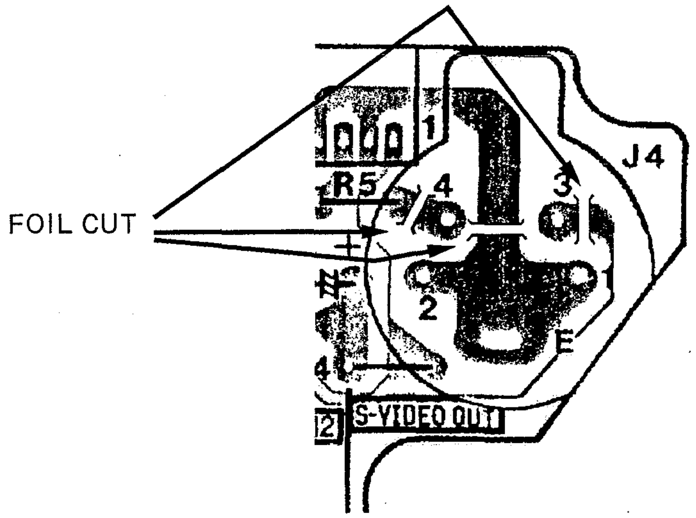
Subject: Change of AV OUT C.B.A. Foil

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	16	VSD9406M252A	H4T---

Board :AV OUT C.B.A.(VEP00U24A)

In order to prevent noise leaking, the foil of the AV OUT C.B.A. have been cut as shown below.



(TE2-4004)

Panasonic

Printed in Japan

Service Manual

Supplement

Video Product

Subject: Change of Servo Microprocessor IC (No.1)

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	17	VSD9406M252A	H4T---

Board :AUDIO/SYSCON C.B.A.(VEP04442B)

Reason for Change

☐ The following part(s) has(have) been changed for serviceability improvement.
☐ The following part(s) has(have) been changed for productivity improvement.
☐ The following part(s) has(have) been changed for standardization.
☐ The following part(s) has(have) been changed for the safety regulation.
■ Software Version: <2.0>
Reduce the REC start time from REC/PAUSE mode.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
IC6001	VSI1507B	MN6755243H7C	IC	1	C	

(TE2-4002)

Panasonic

Printed in Japan

Service Manual

Supplement

Video Product

Subject: Change of Shoulder Pad

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	14	VSD9406M252A	G4T---

Reason for Change

☐ The following part(s) has(have) been changed for serviceability improvement.
☐ The following part(s) has(have) been changed for productivity improvement.
☐ The following part(s) has(have) been changed for standardization.
☐ The following part(s) has(have) been changed for the safety regulation.
■ The Shoulder Pad has been changed for improvement of practical use.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
48	VMT0530	VMT0556	SHOULDER PAD	1	A	

(TM2-2919)

Panasonic

Printed in Japan

Service Manual

Supplement

Video Product

Subject: Improvement of CCD Shading (2)

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	15	VSD9406M252A	H4T---

Board :CCD DRIVE C.B.A.(VEP20491C)
POWER C.B.A.(VEP01584C)

Due to the productivity improvement for CCD shading please refer see supplement service manual (Bulletin No.10), the following parts have been changed.

Note : The following two new C.B.A.s have changed (R574 ~ R576) from the original CCD drive C.B.A. and (R1048, 1049, T1002) from the original Power C.B.A. have also been parts number changed.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
- - -	VEP20491A	VEP20491C	CCD DRIVE C.B.A.	1	C	
R574	ERJ3GEYJ473	ERJ3GEYJ563	M.RESISTOR CH 1/16W 56K	1	C	
R575	ERJ3GEYJ123	ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	C	
R576	ERJ3GEYJ683	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	C	
- - -	VEP01584A	VEP01584C	POWER C.B.A.	1	C	
R1048	VRE0034E124	VRE0034E683	M.RESISTOR CH 1/10W 68K	1	C	
R1049	VRE0034E682	VRE0034E472	M.RESISTOR CH 1/10W 4.7K	1	C	
T1002	VTP0358	VTP0375	TRANSFORMER	1	C	

(TE2-3956,3957)

Panasonic

Printed in Japan

Service Manual

Supplement

Video Product

Subject: Change of Horizontal Deflection Circuit

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	12	VSD9406M252A	G4T---

Board :V DEF C.B.A.(VEP27089A)

The following parts have been changed for improvement of the PAL model.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
C7013	ECUM1C224ZFV	ECSF1VM105	T.CAPACITOR 35V 1U	1	A	
R7013	ERJ3GEYJ822	ERJ3GEYJ153	M.RESISTOR CH 1/16W 15K	1	A	
R7021	ERJ3GEYJ123	ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	1	A	

(SE2-0656)

Panasonic

Printed in Japan

Service Manual

Supplement

Video Product

Subject: Change of Video Out Character Circuit

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	13	VSD9406M252A	G4T---

Board : VIDEO C.B.A. (VEP03B01A)

The color of the VTR Video Out character may change to a gray color when the unit is expose to high temperature.

The following parts have been changed for improvement.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
R3276,77	ERJ3GEYJ332	ERJ3GEYJ682	M.RESISTOR CH 1/16W 6.8K	2	C	

(TE2-3911)

Panasonic

Printed in Japan

Service Manual

Supplement

Video Product

Subject: Improvement of CCD Shading (1)

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	10	VSD9406M252A	G4T---

Board : CCD DRIVE C.B.A.(VEP20491A)
POWER C.B.A.(VEP01584A)
PROCESS C.B.A.(VEP23198C)

In order to improve CCD shading, the following modification(parts change) has been introduced.
A new Process C.B.A. has also been introduced. Please refer to supplement service manual(Bulletin No.8).

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
R574	ERJ3GEYJ563	ERJ3GEYJ473	M.RESISTOR CH 1/16W 47K	1	C	
R575	ERJ3GEYJ153	ERJ3GEYJ123	M.RESISTOR CH 1/16W 12K	1	C	
R576	ERJ3GEYJ473	ERJ3GEYJ683	M.RESISTOR CH 1/16W 68K	1	C	
R1048	VRE0034E683	VRE0034E124	M.RESISTOR CH 1/10W 120K	1	C	
R1049	VRE0034E472	VRE0034E683	M.RESISTOR CH 1/10W 68K	1	C	
R1045	VRE0034E332	VRE0034E272	M.RESISTOR CH 1/10W 2.7K	1	C	

(TE2-3915,3925,3933)

Panasonic

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Service Manual

Supplement

Video Product

Subject: Brightness Adjustment Range Improvement

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	11	VSD9406M252A	G4T---

Board :FRONT C.B.A.(VEP27089A)

In order to expand the range of the BRIGHT VR on the Viewfinder, the following part has been changed.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
R7339	ERJ3GEYJ104	ERJ3GEYJ224	M.RESISTOR CH 1/16W 220K	1	C	

(SE2-0656)

Panasonic

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Service Manual

Supplement

Video Product

Subject: Change of High Voltage Protection Circuit

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	8	VSD9406M252A	G4T---

Board : V DEF C.B.A.(VEP27087A)
FRONT C.B.A.(VEP27089A)

In order to improve the high voltage protection circuit,the following parts have been changed.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
R7025	ERJ3GEYJ333	- - -		0	E	DELETE
R7025	- - -	RD10UMB1	DIODE	1	C	Mounted on R7025 silk screen pads
R7026	ERJ3GEYJ222	ERJ3GEYJ152	M.RESISTOR CH 1/16W 1.5K	1	C	
C7302	ECST1AC226Z	ECST1CC156Z	T.CAPACITOR 16V 15U	1	C	

(SE2-0657)

Panasonic

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Service Manual

Supplement

Video Product

Subject:Introduction of New Process C.B.A.

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	9	VSD9406M252A	G4T---

Board :PROCESS C.B.A.(VEP23198C)

A new Process C.B.A. has integrated the following sub assembles into one circuit board. (VEP23218A,VEP23266A,VEP23230A)

<Contents of attached pages>

- Schematic Diagrams (1/12 ~ 12/12) (See Page AT-1~AT-12)
- Parts Comparison Chart (See Page AT-13)
- Circuit Board Diagram (See Page AT-14)
- Electrical Parts List (See Page AT-15)

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
E16	VEP23218A	- - -	D/S SUB C.B.A.	0	- -	DELETE
E17	VEP23266A	- - -	CAMERA BUFFER C.B.A.	0	- -	DELETE
E18	VEP23230A	- - -	D/S SUB C.B.A.	0	- -	DELETE

(TE2-3925)

Panasonic

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Service Manual

Supplement

Video Product

Subject: Change of Syscon Microprocessor IC (No.1)

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	6	VSD9406M252A	G4T---

Board :AUDIO/SYSCON C.B.A.(VEP04442B)

Reason for Change

☐ The following part(s) has(have) been changed for serviceability improvement.
☐ The following part(s) has(have) been changed for productivity improvement.
■ The following part(s) has(have) been changed for standardization.
☐ The following part(s) has(have) been changed for the safety regulation.
■ No software change

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
IC6501	VSI1424A	UPD78148F045	IC	1	A	

(TE2-3949)

Panasonic

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Service Manual

Supplement

Video Product

Subject: Change of Scene File Parameter Setting

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	7	VSD9406M252A	G4T---

Board :PROCESS C.B.A.(VEP23198C)

	NORMAL	FLUO. LAMP	SPARKLING	SPECIAL
H DTL	25	25	31	21
H DTL FREQ	3	3	3	3
V DTL	14	14	19	10
LEVEL DEP	3	3	4	3
DARK DTL	OFF	OFF	OFF	OFF
CORING	1	1	2	1
CHROMA DTL	0	0	0	0
C GAIN 1	+97	+112	+110	+88
C GAIN 2	+121	+102	+127	+112
C PHASE 1	−14	−8	−14	−9
C PHASE 2	−38	−45	−38	−30

※ Scene file A, B initial settings data are the same as Normal mode.

(TE2-3948)

Panasonic

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Service Manual

Supplement

Video Product

Subject: Improvement of Sub-emphasis Characteristic

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	4	VSD9406M252A	F4T---

Board :VIDEO C.B.A.(VEP03B01A)

Symptom : Over-modulation appears during playback of the recorded tape of AG-DP800 on the another VCR in SQPB mode.

Remedy : In order to maintain interchangeability, the following parts have been changed.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
C3085	ECUX1H820JCV	ECUX1H390JCV	C.CAPACITOR CH 50V 39P	1	C	
C3086	ECUX1H680JCV	ECUX1H270JCV	C.CAPACITOR CH 50V 27P	1	C	

(TE2-3926)

Panasonic

Printed in Japan

Service Manual

Supplement

Video Product

Subject: Change of Camera Microprocessor IC (No.1)

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	5	VSD9406M252A	F4T---

Board :PROCESS C.B.A.(VEP23198C)

Reason for Change

☐ The following part(s) has(have) been changed for serviceability improvement.
☐ The following part(s) has(have) been changed for productivity improvement.
■ The following part(s) has(have) been changed for standardization.
☐ The following part(s) has(have) been changed for the safety regulation.
■ No software change

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
IC3600	VSI1506	MN1883210H8B	IC	1	A	

(TE2-3896)

Panasonic

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Service Manual

Supplement

Video Product

Subject: Correction in Parts Number List

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.
AG-DP800P	2	VSD9406M252A

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	Remarks
Q7009	2SB1218AQR	- - -		0	V DEF C.B.A. (VEP27087A)
R7044	ERJ3GEYJ121	- - -		0	DO
R7045,46	ERJ3GEYJ103	- - -		0	DO
C7030	ECUX1E104ZFV	- - -		0	DO
R8074	ERJ3GEYJ0R00	- - -		0	VIDEO C.B.A.(VEP03B01A)
C8107	- - -	ECUX1H101JCV	C.CAPACITOR CH 50V 100U	1	DO
R516-521	ERJ3GEYJ101	ERJ3GEYJ470	M.RESISTOR CH 1/16W 47	6	CCD DRIVE C.B.A.(VEP20491A)

(SE2-0649,TE2-3873,3871)

Panasonic

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Service Manual

Supplement

Video Product

Subject: Improvement of SCH Jitter

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.	Effective from
AG-DP800P	3	VSD9406M252A	F4T---

Board : PROCESS C.B.A.(VEP23198C)

In order to improve the jitter of the SCH, the following parts have been changed.

Interchangeability Code (I/C)

A	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.	B	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts possible then stock new parts.
C	New parts only may be used in early or late production sets.	D	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
E	Other		

Part Number

Ref. No.	Original Part No.	New Part No.	Part Name & Descriptions	Pcs	I/C	Remarks
C3101,02	ECUX1H470JCV	VCC0037F047	C.CAPACITOR	2	C	
C3748	ECUX1H221JCV	- - -		0	E	DELETE
C3749	ECUX1H101JCV	ECUX1H221JCV	C.CAPACITOR CH 50V 220P	1	C	

(TE2-3896)

Panasonic

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⚠ WARNING
This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advice non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service manual by anyone else could result in serious injury or death.

Order No. VSD9502S214
D4

Service Manual

Supplement

AG-DP800P

Please use this supplement together with the Service Manual as follows:

Model No.	Order No.
AG-DP800P	VSD9406M252A VSD9406M252B

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2.	Correction of Parts Number List
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4.	Improvement of Sub-emphasis Characteristic
5.	Change of Camera Microprocessor IC (No.1)
6.	Change of Syscon Microprocessor IC (No.1)
7.	Change of Scene File Parameter Setting
8.	Change of High Voltage Protection Circuit
9.	Introduction of New Process C.B.A.
10.	Improvement of CCD Shading (I)
11.	Brightness Adjustment Range Improvement
12.	Change of Horizontal Deflection Circuit
13.	Change of Video Out Character Circuit
14.	Change of Shoulder Pad
15.	Improvement of CCD Shading (II)
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17.	Change of Servo Microprocessor IC (No.1)
18.	DC Oscillation Countermeasuer
19.	Change of ZEBRA Display
20.	Introduction of New Rear Jack C.B.A.
21.	Change of EVF Case
22.	Addition of Carrier Trap Circuit
23.	Change of Camera Microprocessor IC (No.2)
24.	Y D/A Latch Mis-operation
25.	Vertical Line Coutermeasure
26.	Change of Servo Microprocessor IC (No.2)
27.	Countermeasure of DC Regulator Oscillation
28.	Improvement of OG Adjustment
29.	Countermeaure of Video Beat
30.	Improvement of IRIS Hunting
31.	Change of 3.5V Regulator Circuit
32.	Change of Camera Microprocessor IC (No.3)
33.	Change of Camera Microprocessor IC (No.4)
34.	Improvement of Y/C Timing
35.	Change of +5V Regulator Circuit
36.	Change of Mechanism Angle (R)
37.	Change of Earth Cable
38.	Change of Camera Microprocessor IC (No.5)
39.	Change of LCD Microprocessor IC
40.	Change of Syscon Microprocesor IC (No.2)
41.	Improvement of IRIS Speed Control
42.	Correction of Camera Adjustment Procedures
43.	Y/C Timing Adjustment Procedure
44.	ZEBRA Adjustment Procedure
45.	Mode Switch Position Adjustment

Attached:
A) Process C.B.A. Schematic Diagra & Parts List --------- for Bulletin No. 9
B) Rear Jack C.B.A. Schematic Diagram & Parts List --------- for Bulletin No. 20

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Service Manual

Supplement

Video Product

Subject: Correction of Service Manual

Please use this supplement together with the Service Manual as follows:

Model No.	Bulletin No.	Order No.
AG-DP800P	1	VSD9406M252A VSD9406M252B

The information in the service manual has been corrected as follows.

1. SPECIFICATION --- Page.1, Service Manual Vol.1 and Vol.2

	(WRONG)		(CORRECT)
[CAMERA]			
Horizontal Resolution :	650 lines	⇒	**700 lines**
S/N Ratio :	56 dB	⇒	**60 dB**
[VIDEO]			
S/N Ratio :	45 dB	⇒	**46 dB**
[AUDIO]			
Frequency Response Normal :	100 Hz ~ 10 KHz	⇒	**50 Hz ~ 12 KHz**

2. EVR MACRO OPERATION --- Page.7-10, Service Manual Vol.2

[No.]	[Function]	(WRONG)		(CORRECT)
4	CAMERA GAIN	SHIFT 1 + 6	⇒	**SHIFT 1 + 7**
5	AGC ON/OFF	SHIFT 1 + 7	⇒	**SHIFT 1 + 6**
6	CAM/BAR SELECT	SHIFT 1 + 8	⇒	**SHIFT 1 + F**

Panasonic

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